THE AGRICULTURAL EXPORT ECONOMY OF SIERRA LEONE: ITS DEVELOPMENT SINCE 1900

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THE AGRICULTURAL EXPORT ECONOMY OF SIERRA LEONE:

ITS DEVELOPMENT SINCE 1900

by

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Dedication

To My Mother

Without Whose Financial Assistance
and Moral Encouragement
The Completion of This Study
Would Have Been Impossible

ABSTRACT

Analysis of the agricultural export economy of Sierra Leone is not new. Most economic studies of the country have treated certain facets of this topic, such as the trends of export volumes and the role of the Sierra Leone Produce Marketing Board (SLPMB) in this sector. However, a thorough economic study is still lacking.

This study attempts: (a) a historical survey of the sector from 1900 to 1945 with a view to testing the appropriateness of Hla Myint's vent-for-surplus model in explaining the export developmental patterns of palm kernel, cocoa and coffee exports within this interval; and (b) an assessment of the roles of institutions, volume and supply determinant factors during the development phase 1946 to 1968 - especially intended to offer a more balanced picture of the declines in the volumes of total agricultural exports that set in around the mid-1950s.

Chapter II deals with the development of the foundation of the agricultural export sector from 1900 to 1945 and ascertains the relevance of the vent-for-surplus model to the peasant export experience of Sierra Leone.

Postwar agricultural export developments largely characterized by the marked downward trend in the volumes of total agricultural exports are discussed in the next three chapters. Unlike the phase 1900 to 1945, export developmental patterns within this period cannot be fitted into any simple theoretical model such as Hla Myint's vent-for-

surplus model or Lewis's labour surplus theory, partly because of the interplay of a host of non-market forces and partly because contraction rather than expansion was the export change that had to be explained.

Chapter III evaluates the roles of institutions such as deliberate government planning, the multifarious activities of the SLPMB and the cooperatives and the consequences of the diamond rush of the 1950's into the Kono, Kenema and Bo Districts in the development of the sector.

Chapter IV focuses attention on the factors influencing the trends and annual fluctuations in the volumes of palm kernel, cocoa and coffee within the interval 1953 to 1968.

Finally, Chapter V attempts a theoretical discussion of supply and an examination of the factors determining the supply of palm kernel exports.

ACKNOWLEDGEMENTS

The research on which this study is based was conducted at Memorial University of Newfoundland, St. John's, Newfoundland, Canada; Njala University College, Njala and Fourah Bay College, Freetown, both in Sierra Leone.

I owe much to several persons at Memorial for valuable assistance: my Supervisor, Dr. B. Singh, Professor of Economics and Director of Economic Research, Institute of Social and Economic Research, who put me through some of my first uncertain steps in research; Dr. S.S. Mensinkai, Professor of Economics, who encouraged my idea of pursuing a Sierra Leonean topic; additional for his role as a friend, a good teacher and advisor; and Professor G.K. Goundrey, for his constructive criticism which helped correct some of my erroneous ideas.

Without the efficient services of the staff of the Memorial University Inter-Library Loan Department, much of my early research efforts would have been fruitless. My thanks to its various members.

In Sierra Leone, my thanks and appreciation go to the Librarians at Fourah Bay College and Njala University for allowing me use of their services.

Lastly, I am grateful to Memorial University for granting me a fellowship that made my graduate studies possible; my parents, especially my mother, for their encouragement, moral and financial help; my many friends and mentors: S.R. Dixon-Fyle, John Nyah, H.L. Van der Laan, Henry Sheku, Atere-Roberts, Augustine Smith, Joe Muana and Mariatu

for encouragement, advice and many unspecified assistance.

All the same, I am alone liable for any mistakes that still persist in this study.

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CHAPTER I

Introduction

The production of crops such as palm kernel, coffee and cocoa (the export crops considered in this study) are intimately related to such geographical factors as climate, vegetation and soil conditions. Although there exists some disagreements about the degree of influence of the socio-cultural environment on agriculture in less developed countries (LDC),[1] most authors are agreed that it is a contributory factor. Accordingly, this section sets out the main elements in the historical, geographical and economic patterns of Sierra Leone that would appear to have some bearing on the analysis of the agricultural export sector.

Historical, Geographical and Economic Settings

Sierra Leone severed its last formal connections with the British monarchical system of government by the declaration of a Republic

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[1]George Dalton, "Traditional Production in Primitive African Economies", Quarterly Journal of Economics, Vol. 76, (August 1962), pp. 360-378.

William J. Barber, "Economic Rationality and Behaviour Patterns in an underdeveloped Area: A case Study of African Behaviour in the Rhodesias", Economic Development and Cultural Change, Vol. 8, (April 1960), pp. 237-251.

in April 1971.[2] In April 1961, independence was attained, at which time a Dominion-type constitution was adopted. The former event concluded almost two hundred years of affiliation with Britain. Around 1788 a group of English philantropists acquired a parcel of land of some four hundred square miles around the mouth of the River Rokel for the resettlement of liberated slaves from England, America, Nova Scotia, the West Indies and the West African High Sea. During the early years of the settlement, a company administered the affairs of the community; however, in 1808, owing to financial difficulties, it relinquished its duties to the British Government and the country became a crown colony.

The great bulk of the country, the hinterland, was added to the crown colony in 1896 to form what today comprises Sierra Leone.

For administrative purposes, the country is divided into four regions: three Provinces (Northern, Southern and Eastern) and the Western Area. The Provinces are subdivided into twelve Districts made up of 146 Chiefdoms.

Situated on the West Coast of Africa between $6^0 55'$ and 10^0 North Latitude, and $10^0 16'$ and $13^0 18'$ West longitude, Sierra Leone borders on the Republic of Liberia on the South-East, and Guinea on the North. There are about 210 miles of Atlantic coastline on the South-West. The total land area is 27,925 square miles and the population was estimated by the 1963 census at 2,168,815.

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[2]The historical survey is purposely brief. For detailed analyses see: Christopher Fyfe, A Short History of Sierra Leone, (London: Longmans, 1962); Martin Kilson, Political Change in a West African State: A Study of the Modernization Process in Sierra Leone, (Cambridge, Mass.: Harvard University Press, 1966); and Arthur Porter, Creoledom, (London: Oxford University Press, 1963).

Its three main physical regions are:

(i) the hilly Freetown Peninsula, which stretches for some twenty-five miles in a South-Western and a South-Eastern direction from the port and capital, Freetown;

(ii) the interior lowlands, rising to high grounds over 6,000 feet in the Loma Mountains and the Tingi Hills - an extension of the Guinea Highlands; and

(iii) the Coastal Swamps, laced by mangrove swamps and fresh water grasslands.[3]

The country lies within the humid tropics and accordingly experiences (i) high temperatures ranging between 80^0F and 100^0F, and (ii) heavy rainfall fluctuating between 90 and 130 inches per annum. There are two seasons; the wet and dry seasons. The dry season occurs from December to April. During this period, the dry North-East trade wind, known locally as the Harmattan[4] blows. Temperatures are high during the day and cool at night. Humidity is low. The wet season starts in May and ends in November. Temperatures are normally lower than average because of cloud cover. The South-West trade winds, the Monsoon, replaces the Harmattan. Much of the rain that falls is caused by the Monsoon Wind, which blows at its highest in June, July, August and September.[5]

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[3]J.I. Clarke (edited), Sierra Leone in Maps. (London: London University Press, 1966), pp. 14-29.

[4]The Harmattan is a dry cold wind.

[5]Peter K. Mitchell. "The Climate of Sierra Leone". Bulletin of the Sierra Leone Geographical Association, No. 5 (July 1962), pp. 13-15.

The Sierra Leone economic system is a confusing mixture of traditional and market economies, involving the following elements:

> "...a pervasive technological dualism and massive disguised unemployment; economic dependence expressed primarily in an imbalance of financial and managerial power between the Government and the dominant private (mainly foreign) sector; a high incidence of monopoly both in the export sector (mining and agriculture) and in the domestic sector (wholesale and retail distribution); and the tradition of free enterprise and minimum government."[6]

The results of the first exercises in national income accounting by the Sierra Leone Central Statistics Office (hereafter referred to as the SLCSO) give us a rough quantitative assessment of the economy (Table 1-1).[7] The national income was about 182.2 million leones in 1963-64, and at 259 million leones in 1968-69.[8] The per capita incomes for the period 1963-64 to 1968-69 prominently bring to light the poverty

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[6]S.R. Dixon-Fyle. "Review of "The Economic System of Sierra Leone" by Ralph G. Saylor in Journal of Modern African Studies, Vol. 7:1, 1969; p. 163.

[7]Accounts of the economic structure of Sierra Leone could be found in several Government Development plans and Reports on the Economy; see Hubert Childs, Op. Cit., Daniel Jack, Op. Cit. and David Carney's Ten-Year Plan of Economic and Social Development. (Freetown: Government Printer, 1962). Other good studies are: International Bank for Reconstruction and Development, The Current Economic Position and Prospects of Sierra Leone, February 1969 and S.R. Dixon-Fyle,"Economic Structure and short-period behaviour of the Sierra Leone Economy". Bank of Sierra Leone, Economic Review, Vol. 2(3) December 1967. However, Ralph Gerald Saylor's The Economic System of Sierra Leone, Op. Cit. is currently the best available general survey.

[8]No great stores is put on the accuracy of the results of this pioneering statistical calculation: "The available statistical data.... suffer from many important gaps and inadequacies many of which have been overcome for the present estimates by ad hoc collection of basic data and some by bold assumptions in consultation with people directly concerned....":
SLCSO, National Accounts of Sierra Leone, 1963-64 to 1965, p. 39.

TABLE 1-1

SIERRA LEONE: NATIONAL INCOME AND PER CAPITA INCOME, 1963-64 TO 1968-69

(Million Leones)

	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Expenditure on Gross National Product	210.7	238.7	252.3	266.1	275.8	315.7
National Income	182.2	203.9	214.3	222.9	246.7	259.0
Gross Domestic Produce at Factor Cost	195.7	219.7	231.9	242.6	252.4	282.8
TOTAL: Population (000)*	2,306	2,341	2,376	2,412	2,448	2,484
Per Capita National Income	79	87	90	92	95	104

Source: SLCSO, National Accounts of Sierra Leone, 1963-64 to 1968-69. (Freetown: Government Printer, June 1970) Table 4, page 8.

* 1963 Census projected, using a population growth rate of 1.5% per annum.

of the great bulk of the population: 79 leones (U.S. $95) in 1963-64 and 104 leones (U.S. $125) in 1968-69.[9]

Agriculture in Sierra Leone

The salient features of agriculture in Sierra Leone include: a pervasive archaic technological base, primitive implements, a poor soil denuded by erosion probably caused by the shortening fallow seasons, small fragmented land-holdings of an average size of around four to five acres, an ancient system of shifting cultivation and a largely illiterate farming population (Table 1-2).[10] As a result, agricultural productivity, on the whole, has been extremely low: for example it was valued at about 100 leones (U.S. $120) per person in 1965, the lowest output per head that year in the whole economy. In spite of low productivity, the agricultural sector occupies an important place in the economy, employing some 75 per cent of the labour force and accounts for about 30 per cent of the G.D.P.[11] As agricultural workers are usually self-employed around a family unit, they do not feature prominently in the wage labour force.[12]

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[9]The Conversion rates are as follows:
1 Leone = Canadian $1.25 (or U.S. $1.20)

[10]Nearly all economic and geographical studies of Sierra Leone in recent years contain descriptions of the agricultural sector. Among them, Ralph Saylor's The Economic System of Sierra Leone (1967), Op. Cit. pp. 34-93, presents the most thorough economic examination to date. Shifting cultivation, agricultural productivities and landownership patterns were some of the topics he discussed. Saylor's novel contribution was his economic examinations questioning the conventional wisdom on these topics.

[11]SLCSO, National Accounts of Sierra Leone, 1963-64 to 1968-69. Op. Cit., pp. 7 and 41.

[12]Saylor, Op. Cit., Table 5.

TABLE 1-2

SUMMARY: STRUCTURE OF THE AGRICULTURAL SECTOR

Total Population, Mid 1965	2,367.0	
Farm Population	1,532.0	
Farm Population - Ten Years and Over	1,179.0	
- mainly engaged in agriculture (i.e. agriculture is primary or secondary occupation and excluding hunting and fishing)	753.0*	
Number of Landholders**	250.7	100.00%
by Chieftancy	33.4	13.2
by Family	196.3	78.4
by Payments of Fees	15.5	6.2
Other Arrangements	5.6	2.2
Size of Holdings - Number of Holders Cultivating	250.7	100.00
Under 1 Acre	32.7	13.1
1 Acre and Under 5 Acres	131.4	52.4
5 Acres and Under 10 Acres	48.6	19.3
10 Acres and Under 15 Acres	9.0	3.6
15 Acres and Over	3.3	1.3
Acreage Not Reported	25.8	10.3
Percentage of Holdings Consisting Of***		100.00
1 Field		45.7
2 - 3 Fields		45.7
4 - 5 Fields		7.4
6 Fields and Over		1.2

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* This figure is somewhat higher than census results, but difference believed due to differences in definitions used to classify people by occupation.

** Except in the Western Area, Land in Sierra Leone is not individually owned.

*** Total Number of fields can be estimated to be approximately 500,000.

Source: SLCSO, Agric., Census, as summarised in IBRD, The Current Economic Position and Prospects of Sierra Leone, Table 10.

For analytic purposes, we can classify the activities of the agricultural sector into three main categories:

(1) Export market production: involving such crops as palm kernels, cocoa, coffee, piassava, ginger and kola-nuts.

(2) Internal market and/or subsistence production: involving such crops as rice, cassava, plaintains, bananas, mangoes and maize.

(3) Animal husbandry.

Crop production usually accounts for the bulk of the total value of agricultural production. For example for the period 1963-64 to 1968-1969, their share was four-fifths of the total (Table 1-3). Some twenty five crops produced in Sierra Leone were identified by the SLCSO in their 1965 Agricultural Statistical Survey (Tables 1-4 and 1-5). Among these crops, rice, the staple food, was easily the most important crop in both value and quantity (Tables 1-4 and 1-5) accounting for around 40 to 45 per cent of the total value of all agricultural crops. Other important crops included palm kernels, bananas, plantains, cassava and citrus fruits.

The contribution of the main agricultural export crops (palm kernels, piassava, coffee, cocoa and kola nuts) to both value and quantity of total agricultural production within the same period was comparatively small. By volume they formed about 6 per cent; and by value between 10 and 15 per cent.

Some aspects of agricultural production in Sierra Leone can be described as subsistence, meaning "a situation where the fruits of an

TABLE 1-3

OUTPUT OF AGRICULTURE , FORESTRY AND FISHERY 1963-64 TO 1968-69

(Thousand Tons)

	1963-64	1964-65	1965-66	1966-67	1967-68	1968-69
Agriculture (Crop Production)	60.2	64.9	65.6	71.7	86.1	89.9
Animal Husbandry	3.8	3.9	4.0	4.8	5.1	5.1
Forestry, Logging and Hunting	3.3	3.3	3.4	3.6	3.6	3.7
Fishing	2.3	2.1	2.1	4.2	5.6	4.5
Total: Agriculture, Forestry and Fishing	69.6	74.2	75.1	84.3	100.4	103.2

Source: SLCSO, National Accounts, 1963 to 1969. Op. Cit., Table 17, page 37.

TABLE 1-4

QUANTITY OF AGRICULTURAL CROP PRODUCTION FOR SELECTED YEARS 1963-64 TO 1968-69

CROP	PRODUCTION (000 Tons) 1963-64	1964-65	1965-66	1967-68	1968-69
Palm Kernels	58.1	57.4	54.4	12.6	70.9
Coffee	4.6	6.7	4.5	0.7	7.0
Cocoa	3.8	3.6	3.4	4.2	5.5
Ginger	0.8	0.8	1.1	1.0	1.7
Kola Nuts	6.8	7.2	7.0	6.9	7.1
Piassava	5.9	7.4	4.7	2.9	6.3
Total: Main Agricultural Export Crops	80.0	83.1	75.1	28.3	98.5
Husk Rice: Paddy	393.9	393.9	393.9	461.0	461.0
Millet	11.2	11.7	11.7	12.0	12.0
Sorghum	11.2	11.2	11.5	12.0	12.0
Maize	9.3	9.3	9.5	10.0	10.0
Pegeon Peas & Cow Peas	0.8	0.8	0.8	0.8	0.8
Cassava	60.2	60.2	60.2	60.0	60.0
Sweet Potatoes	9.0	9.0	9.0	9.1	9.2
Groundnuts	13.8	13.8	13.8	14.0	14.2
Palm Oil	27.2	26.9	25.4	46.3	47.0
Benniseed	0.6	0.5	0.4	0.1	0.2
Coconuts	22.8	23.1	23.4	23.8	24.2
Mangoes	46.6	47.1	47.7	47.3	48.0
Citrus Fruits	71.3	72.1	72.8	72.1	73.4
Bananas & Plantains	100.5	101.6	102.8	101.9	103.4
Other Fruits	4.2	4.2	4.3	4.4	4.5
Tomatoes	8.2	8.3	8.4	8.5	8.6
Beans	22.3	22.5	22.8	24.3	24.7
Other Vegetables	18.0	18.2	18.4	20.3	20.6
All Other crops and By-products including Palm Wine	n.a	n.a	n.a	n.a	n.a
Total: Internal and/or subsistence market crops	831.1	834.4	836.8	897.3	933.8
Total	911.1	917.5	911.9	925.6	1,032.3

Source: SLCSO, National Accounts 1963-64 to 1965-66 and National Accounts 1963-64 to 1968-69. (Freetown) pp. 26 and 42-43 respectively.

TABLE 1-5

VALUE OF AGRICULTURAL CROP PRODUCTION FOR SELECTED YEARS 1964-69

CROP	Value (000 Leones) 1963-64	1964-65	1965-66	1967-68	1968-69
Palm Kernels	3,254	3,421	3,460	801	4,353
Coffee	1,202	1,801	1,210	188	2,038
Cocoa	993	968	914	940	65
Ginger	179	269	370	336	571
Kola Nuts	1,108	1,469	1,208	1,405	1,446
Piassava	378	478	338	205	490
Total: Main Agricultural Export Crops	7,114	8,406	7,500	3,875	8,963
Husk Rice: Paddy	29,306	30,567	32,063	46,561	46,561
Millet	448	468	468	480	480
Sorghum	381	381	391	408	408
Maize	316	316	323	340	340
Pegeon Peas and Cow Peas	40	40	40	40	40
Cassava	1,794	1,744	1,794	3,360	3,360
Sweet Potatoes	351	351	351	1,019	1,030
Groundnuts	994	1,104	1,159	1,092	1,108
Palm Oil	5,100	6,104	6,198	13,483	12,131
Benniseed	49	45	36	9	18
Coconuts	1,473	1,610	1,631	1,071	1,089
Mangoes	2,470	2,694	2,728	3,548	3,600
Citrus Fruits	3,579	3,908	3,838	3,901	3,960
Bananas & Plantains	5,568	6,076	6,147	6,094	6,183
Other Fruits	551	596	610	624	638
Tomatoes	935	1,021	1,033	2,856	2,890
Beans	2,009	2,187	2,216	2,362	2,400
Other Vegetables	1,159	1,265	1,279	1,411	1,432
All other crops and By-products including Palm Wine	5,000	5,000	5,000	6,000	6,000
Total: Internal and/or subsistence market crops	61,523	65,523	67,306	94,657	93,669
Total	68,637	73,929	74,806	98,532	102,632

Source: SLCSO, National Accounts 1963-64 to 1965-66; and National Accounts 1963-64 to 1968-69, pp. 26 and 42-43.

individual or group productive effort are directed more toward meeting immediate consumption needs out of production without any intermediaries or exchange".[13] The extent of this sector had been vaguely delineated[14] prior to an agricultural survey by the SLCSO.[15] Even the SLCSO's exercise is considered only a rough guide given the treacherous conceptual difficulties involved in identifying "subsistence activities".[16]

This survey estimated that subsistence activities accounted for roughly 20 per cent of the GDP within the period 1963 to 1966 (Table 1-6).

The Export Economy

Exports of Sierra Leone[17] consist chiefly of products from the extractive industries. A classification[18] of the items under each group

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[13]Clifton R. Wharton Jr. "The Economic meaning of 'subsistence'". Malayan Economic Review 8(2) October 1963, p. 48.

[14]See for example: H. Childs, A Plan of Economic Development for Sierra Leone, (Freetown: Government Printer, 1949), p. 5-:"...most farmers are not engaged purely in subsistence farming...and subsistence income (was) not easily calculated"; and D.T. Jack, An Economic Survey of Sierra Leone, (Freetown: Government Printer, 1958), p. 8-: "A large, though indeterminate part of agriculture which is practised is subsistence farming...".

[15]SLCSO, National Accounts 1963-64 to 1965-68, p. 38.

[16]For a detailed discussion of some of these difficulties see for example: H.W. Ord and I. Livingstone, An Introduction to West Africa Economics, (London: Heinemann, 1969), pp. 10-11; and K.C. Abercrombie, "Subsistence Production and Economic Development", FAO, Monthly Bulletin of Agricultural Economics and Statistics, 14(15) May 1965, pp. 1-8.

[17]See Figure 1-1 for the geographical locations of the main items today.

[18]This classification only takes into account currently important items. Other important Sierra Leonean exports in past years whose production has either ceased or waned are gold, chrome ore, bees wax, pepper, pimento, calabar beans, beni-seeds and palm oil: Bagai, Op. Cit., p. 7.

TABLE 1-6

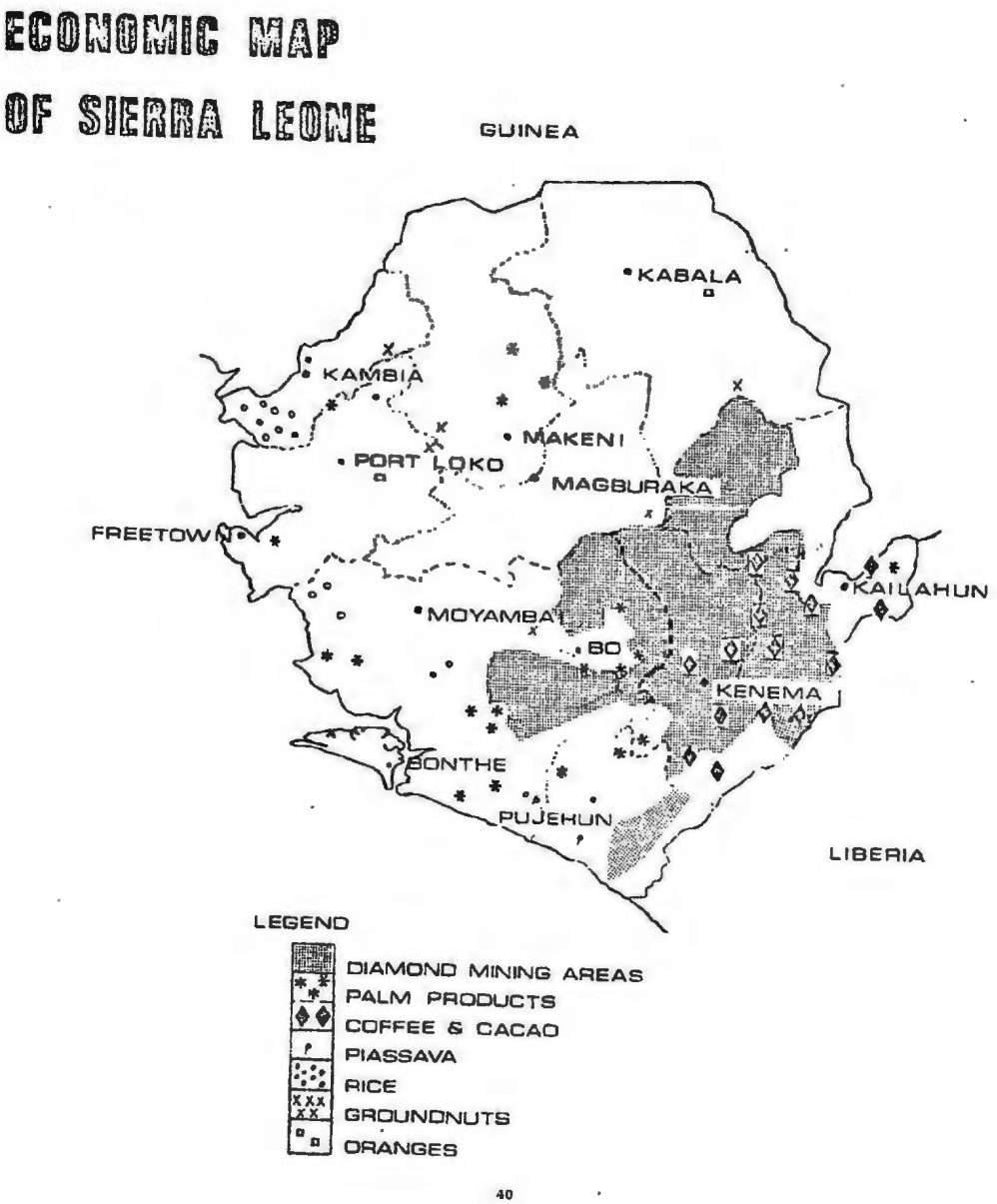
SHARE OF SUBSISTENCE ACTIVITIES IN THE GROSS DOMESTIC PRODUCT: 1963-64 to 1965-66

	(million leones) 1963-64	1964-65	1965-66
Subsistence Activities:[a]			
(i) Agriculture, Forestry, Hunting and Fishing	45.5 (95.7)	48.2 (95.6)	49.5 (95.5)
(ii) Ownership of Dwelling	2.0 (4.3)	2.2 (4.4)	2.3 (4.5)
Total	47.5	50.4	51.8
Non-Subsistence Economy	153.7	175.8	188.6
Gross Domestic Product	201.2	226.2	240.4
Percentage of Subsistence Activities to GDP	23.6	22.2	21.5

a Figures in parentheses represent percentages of items to total subsistence activities.

Source: SLCSO, The National Accounts of Sierra Leone, 1963-1966, Op. Cit., p. 38.

FIGURE 1-1


ECONOMIC MAP
OF SIERRA LEONE
GUINEA
KABALA
KAMBIA
MAKENI
PORT LOKO
MAGBURAKA
FREETOWN
KAILAHUN
MOYAMBA
BO
KENEMA
BONTHE
PUJEHUN
LIBERIA
LEGEND
DIAMOND MINING AREAS
PALM PRODUCTS
COFFEE & CACAO
PIASSAVA
RICE
GROUNDNUTS
ORANGES
40

is as follows:

(1) Mining: Diamonds, iron ore, bauxite and rutile

(2) Agriculture: palm kernels, coffee, cocoa, piassava, ginger and kola nuts.

Mineral Exports

From moderate origins in the 1930's, mineral productions involving such items as diamonds, iron ore, gold and chrome ore, have expanded to become Sierra Leone's most important domestic exports since the mid-1950's.[19] Within the past forty years, the following important changes have occurred:

(a) Economic deposits of gold and chrome ore productions have been exhausted;

(b) In the last decade, the production and marketing of bauxite and rutile have begun, although operations are still in the rudimentary stages; and

(c) Diamonds and iron ore have maintained their positions as the country's main mineral exports.

Recently, some restructuring has taken place in the relative values of the two important minerals, diamonds and iron ore. Up to 1956 iron ore was the most important mineral export; but since then, diamond production has expanded to such an extent that it today overshadows this mineral. In 1955, for example, iron ore exports were valued at 7 million leones (37 per cent of total domestic exports) compared with diamond exports of 3 million leones (14 per cent of total

[19]Jack, Op. Cit., pp. 27-32.

domestic exports). But in 1964, diamonds accounted for about 40 million leones (65 per cent of total domestic exports) compared with iron ore exports of 10 million leones (17 per cent of total domestic exports). Mineral exports in recent years have accounted for approximately 80 per cent of total exports, roughly divided between diamond and iron ore in a three to one ratio.[20]

Agricultural Exports

Agricultural export production in Sierra Leone involves the cultivation and/or processing of such cash crops as palm kernels, coffee, cocoa, piassava, ginger and kola nuts,[21] and some staple food crops as rice and cassava predominantly by peasant farmers on small fragmented owner-operated plots.[22] As such this section is not a distinct facet of the agricultural economy.

> "...most farmers are not engaged in purely subsistence farming but have several strings to their bows. For the most part they are small holders relying on their own labour and that of their families, growing their own food crops and vegetables, with frequently a small surplus for sale, as often as not making their own palm oil, and earning a small but increasing cash income by the production of palm kernels or piassava, Kola or cocoa, coffee or ginger."[23]

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[20]See Bank of Sierra Leone, Economic Review, Tables of Domestic Exports, 1960 to 1968.

[21]These items roughly make up 98 per cent of Sierra Leone's agricultural exports; however, in this study we would be focusing attention mainly on (a) palm kernels, (b) cocoa and (c) coffee.

[22]This is excepting the Sierra Leone Produce Marketing Board's plantations whose total contribution to overall production is insignificant.

[23]Hubert Childs, A Plan of Economic Development for Sierra Leone. (Freetown: Government Printer, 1949), p. 6.

The production of agricultural export crops is largely concentrated in the Southern portion of the country, with the Eastern Province prominently standing out as the principal area.[24] Palm kernel, the dominant tree export crop occurs mainly as wild groves; cocoa and coffee are grown in small-sized plantations chiefly in the Kenema and Kailahun districts. Piassava, a strong vegetable fibre extracted from the leaves of the raphia palm and used in the making of tough brushes and brooms, is found in the estauarine swamps of the Pujehun district. The Moyamba district is the traditional region for the production of ginger; and kola nuts are backyard crops grown mainly in the South.

Export crops were the mainstay of the development of the Sierra Leone economy from the mid-nineteenth century up to the mid-1950's. From this period up to the present, the accent has been on minerals, especially diamonds and iron ore. But in spite of their dwindling contributions to total domestic exports, agricultural export revenues still make up an important share of the incomes of the peasant farming communities, a by no means small group in the Sierra Leone economy. An institution which has eminently influenced export revenue distribution to peasant farmers since 1949 is the Sierra Leone Produce Marketing Board (SLPMB), whose manifold activities as monopoly-marketing, price stabilization and later agricultural development agency, represent one of the most significant influences in the agricultural export sector in recent years. However, the activities of peasant farmers have also been

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[24] SLCSO, Agricultural Statistical Survey 1965-66. pp. 19-24.

important in the development of the sector. In the absence of an appreciable amount of large plantations run by government, indigenous- or foreign-owned private enterprises up to the present time, it has been such farmers that have been responsible for the growing, processing and sale of the greater bulk of this country's agricultural export crops.

A. The Oil Palm (Elaeis Guineensis)

The second important crop produced in Sierra Leone after rice the staple food and the principal agricultural export, is the oil palm. Indeed from the start of this century up to the mid-1950's this crop accounted for the great bulk of export production.[25] Alldridge vividly portrayed the traditional importance of this crop in the Sierra Leone economy when he observed:

> "To the natives it (the oil palm) has always been a kind of beneficient providence, springing untended...requiring neither planting nor watering, asking nothing of human hands, but giving its substance freely, without stint, and with unfailing regularity. It provides (them)...with food, drink, and with nearly all the simple necessities of daily life...two staple articles of their commerce which bring work and gain to vast numbers..."[26]

The oil palm belt occurs principally in the wetter regions of the forest zones of West Africa along the coast from Gambia to Angola, extending inland for some three hundred miles.[27] In Sierra Leone, the

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[25]Moshe Zui, Marketing of Export Crops of Sierra Leone, (Freetown: FAO, 1969), p. 6. Mimeo.

[26]T.J. Alldridge, A Transformed Colony, Sierra Leone. (London: Seeley,1909), p. 78.
T.J. Alldridge was at the turn of the century a retired Colonial Administrator with vast knowledge of the interior of Sierra Leone.

[27]Clarke, Op. Cit. p. 78.

crop is widespread throughout the country; however, its dense growth is mainly found in the South-East.[28] As in other parts of West Africa the crop's importance diminishes in the coastal swamps and the drier North where the minimum rainfall of 55 inches does not obtain.[29]

The oil palm[30] has the following uses:

A. Local uses

(a) Palm oil (i.e. the oil from the nesocarp)

(1) Edible oil

(2) Soap making;

(b) Palm Kernel Oil

(1) Pomade for the skin;

(c) Palm Wine

(1) Local beverage;

B. Export uses

(a) Palm Oil

(1) Margarine

(2) Compound cooking fat

(3) Tinplate industry

(4) Candles and soap manufacture;

(b) Palm Kernel Oil

(1) Making soap and margarine

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[28] Ibid.

[29] For more information on the technical aspects of the crop, see C.W.S. Hartley, The Oil Palm, (London: Longmans, 1967)

[30] The fruit of the oil palm has three components: (a) a fleshy outer pulp, the mesocarp; (b) a hard inner shell, the endocarp; and (c) the kernel. Two products are derived from the fruit: a reddish oil, gotten from the mesocarp; and another from the kernel: The United Africa Company Ltd., "African Produce in the World Market: Oil Palm Produce". Statistical and Economic Review, No. 25 (March 1961), pp. 48-49.

(b) (cont.)

(2) Confectionary

(3) Making of ice-cream and mayonnaise

(4) Production of glycerine, pomade and synthetic detergents.

B. Cocoa (Thebroma Cacao)

Cocoa[31] has in the last two decades become established as one of Sierra Leone's important agricultural export crops. Although it is indigenous to South America, over half of the world's cocoa production for many years now emanates from West Africa, especially Ghana. Well-drained soils with warm humid climate not interrupted by hot drying winds have been found particularly suitable for the crop's growth. In West Africa, the crop is cultivated in the dense forest belts found in Ghana, Togo, Sierra Leone, Eastern and Western Nigeria and Eastern Cameroon. The areas of dense concentration of the crop in Sierra Leone are Kenema, Kailahun and Pujehun Districts.[32] The Agricultural Statistical Survey of 1965 noted that:

> "Roughly, eleven million cocoa trees were growing on 46,000 acres during the period of the survey. About 40 per cent were of non-bearing age and 60 per cent of a bearing age. Of the total acreage, 17,000 acres were in pure stands and the remainding 29,000 acres were under cocoa plantings of varying density with other crops, but cocoa was the principal crop in the area...It was grown by small holders mostly in the Eastern Province and to a lesser extent in the Southern Province.[33]

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[31]The terms 'CACAO' is generally used to designate the crop and 'COCOA' the manufactured product. In general usage these terms are interchangeable: C.B. Masefield, A Handbook of Tropical Agriculture, (London: OUP, 1957), pp. 177-89.

[32]Duncan H. Urquhart, Report on the Cocoa Industry in Sierra Leone and Notes on the Cocoa Industry of the Gold Coast (Bournville:Cadbury 1955), p. 20.

[33]SLCSO, Op. Cit. p. 25.

Cacao is generally grown on ridges and banks of rivers in primary or secondary forests in Sierra Leone; most of the early plantations were in such forests near villages. To grow the crop, the farmer partially clears away the undergrowth, leaving heavy trees such as the oil palm to serve as cover for the young trees. Plaintains, bananas and yams are planted among the young cacao trees. After about five years, the crop starts bearing; however, full bearing really sets in only after seven to ten years. Until it reaches maturity, only cursory attention is normally given to the crop; this takes the form of occasional weed cleaning.

Harvesting of the crop takes place in two seasons: a heavy one just after the rains, lasting from September to December, and a light one between April and June.

Uses (mainly for export)

1. Cacao beans
    (a) Manufacture of cocoa powder and chocolate;
2. Bye-Product: cocoa butter
    (a) Used in conjunction with cocoa powder in the manufacture of confectionery;
    (c) Coffee (coffea spp.)[34]

Since the war, coffee export production in Sierra Leone has been on the increase; today, the crop rates in importance in terms of revenue acquisition with cocoa and piassava. The ideal conditions for the cultivation of the crop include: a deep rich and well-drained loamy

[34]For technical information: Masefield, Op. Cit., pp. 85-87.

soil; rainfall between 40 and 70 inches per annum; and an average temperature of around 70^0F per annum not marked by violent fluctuations either way. Areas in Africa where the crop is produced on a moderate scale include the Ivory Coast, Angola, Sierra Leone, Nigeria and Ghana. In Sierra Leone, the coffee belt largely occurs in the Southern (about 50 per cent) and Eastern (about 30 per cent) Provinces.[35] Peasant farmers find the cultivation of the crop relatively attractive compared with say cocoa as it does not demand rigid climatic and soil conditions.

Coffee trees are first grown in nurseries for about a year before they are replanted in plantations adequately sheltered by high trees. After approximately two to five years the young trees start bearing.[36]

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[35]SLCSO, Agricultural Survey, p. 25.

[36]United Africa Company, "African Produce in the World Market: Coffee," Statistical and Economic Review, No. 28 (April 1963), p. 40.

CHAPTER II

THE DEVELOPMENT OF THE AGRICULTURAL EXPORT SECTOR, 1900-1945

Agricultural exports enjoyed a remarkable expansion in the period 1900 to 1945: the export volumes of palm kernels reached an all-time peak record level in 1936, and cocoa and coffee became firmly established in the indigenous farming system of Sierra Leone. This chapter will attempt (a) a historical survey of the development of the sector from 1900 to 1945; (b) a review of some theoretical explanations of development in some African countries through export production; and (c) the ascertainment of the relevance of one of these theories - the vent-for-surplus model - in explaining the patterns of development of palm kernel, cocoa and coffee.

Colonial Agricultural Export Development Policy

The distinctive feature of the Colonial Government's policy towards agricultural export development from 1900 to 1945 was laissez-faire. Actual crop production and marketing were left entirely to private enterprises.

The activities of the Colonial Government in the agricultural export sector were concentrated in:

(a) the establishment of certain agricultural institutions such as the department of agriculture and other sub-stations involved

in agricultural research and extension services; and

(b) the construction of a rudimentary transportation network (roads and a railway) designed to make the hinterland accessible for trading and administrative purposes.

Institutional Changes

That a more serious approach to agricultural development was adopted by the Colonial Government from 1900 to 1945 is clearly evident by the diverse agencies devoted solely to the problems of this sector created within this period. They included:

1. The Agriculture Department;
2. Njala and Newton Experimental Stations;
3. The Mabank Agricultural College, the Njala Venacular School and Bo Government School.

The establishment of the Department of Agriculture in 1911 with a specialized staff including a cadre of research workers whose broad function was to tackle the peculiar problems of tropical agriculture in Sierra Leone marked a remarkable change in government policy for export crop production.[1] This Department became the government institution through which all its changes in export crop production in particular and agricultural development in general were initiated and executed.[2] Specifically, the Department had a dual function:

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[1]Sierra Leone, Department of Agriculture, Annual Report for 1911, (Freetown: Government Printer, 1912) p. 1. Hereafter cited as Annual Report of the Department of Agriculture in spite of changes in the name of the Department within the years.

[2]To be sure, the Department of Agriculture was fore-shadowed by the Freetown Botanic Garden Station established in 1895, whose duties were closely related to the Department's when it was created. See "History of Agriculture and Forestry in Sierra Leone, 1871-1967", in The Vegetation of Sierra Leone, by N.H.A. Cole (Njala: Njala University College Press, 1968) pp. 5-6.

(1) Responsibilities to augment food production to satisfy both local market and subsistence requirements; and

(2) To enhance export crop productions.

With reference to export crop productions this function consisted of programmes - extension services and seedlings and/or improved plant distributions - designed to encourage production by local farmers of new and improved varieties of the crops.[3] It also after the creation of the Production Inspection Branch in the 1920's gave instructions on the proper preparation of the crops for marketing purposes.[4] During this period, however, its actual participation on the production side of the agriculture export economy was virtually nil.[5]

The Njala experimental station established in 1912 on some 1,200 acres of land on the River Taia in the Moyamba District and the Newton experimental station and other substations opened in the 1920's became the experimental arm of the Department of Agriculture for cash crop production.[6] Various experimental production methods for export crops such as cacao, coffee and the oil palm were undertaken. New and/or improved varieties of the crops were planted in the nurseries from where they were distributed to local farmers. In accordance with the government's policy of laissez-faire, actual productions were left to the peasant farmers; emphasis was put on the "demonstration effects". A case in point was the occasional visits to the Njala experimental farm arranged for chiefs and other traditional leaders in order to enable

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[3] Annual Reports of the Department of Agriculture, 1912-14.

[4] Ibid.

[5] Saylor, Op. Cit. pp. 74-75.

[6] Sierra Leone, Annual Reports of Department of Agriculture 1912-1945.

them to see for themselves first-hand scientific methods of producing the crops.[7]

Transportation Development and Export Crop Productions

The underdeveloped nature of the transportation network before the start of this century acted as an important constraint in the development of the agricultural export economy.

> "Prior to 1896 there were no improved forms of transportation. Rather, natural networks were employed - the open sea, the riverine routes and the overland bush path. The frictional effects of distance upon movement were naturally immense, for even the waterways were subject to periodic floods and frequent rapids and shallows. Overland movement was disturbed by the convulsions of intertribal conflict."[8]

The railway, whose construction began in 1895, was one of the first modes of modern transport to fill the void. Its extension into the Southern and Eastern Provinces greatly helped the development of export crop production in these areas by activating production in the vicinity of regions it traversed, areas because of their obscure sites, away from the coast and navigable rivers had hardly before participated

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[7]The 1918 Annual Report on one of these visits reads: "...with regard to these visits, I wish to report that a number of chiefs who came to Njala in 1917 appear to appreciate what they saw. They have started permanent plantations of their own and, beyond that, owing to the reports they carried back into their countries, five chiefs at their own requests visited the Experimental Farm in 1918."

[8]John Barry Riddel, "Structure, Diffusion and Response: The Spatial Dynamics of Modernization in Sierra Leone", (Doctoral Dissertation, Pennsylvania State University, 1969), p. 55.

in this trade.[9]

In the inter-war years, on account of the absence of good feeder roads in the major crop producing regions, the main features of the previous primitive system of transport - head porterage and river carriage - still persisted.[10] Real development in the transportation system with its attendant effects on export crop productions was a development of the last two decades.

Marketing Arrangements

From 1900 up to the outbreak of the second world war, the purchase and shipment of export crops in Sierra Leone were performed by a handful of European and Levantine import-export firms; the actual purchase of these crops from the peasant producers and transportation to the stores of these firms were done by their clerks and other numerous middlemen using their resources.[11]

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[9]Allan McPhee, The Economic Revolution in West Africa. (London: Routledge, 1926), p. 89.;
Joseph Byrne, "Sierra Leone: Trade and Communication", Journal of the African Society, Vol. 29 (October 1929) pp. 3-4; and
Shekou M. Sesay, "Transport in Relation to Social and Economic Development in Sierra Leone", (Doctoral dissertation, University of Durham, 1967), p. 100:

> "The Railway, through the insistence of Governor Cardew, was pursued to the South and Eastern Provinces to tap the wealth of the rich palm belt. Consequently, the latter introduction of other cash crops like cocoa and coffee in the same area was justified on the economic grounds of utilizing the already established transport mode to optimum capacity. "

[10]Peter K. Mitchell, "Trade Routes of the early Sierra Leone Protectorate," Sierra Leone Studies, N.S., No. 16 (1962), p. 205.

[11]Peter T. Bauer, West African Trade (Re-issued Edition, London: Routledge and Kegan Paul, 1963), pp. 202-203;
David E. Carney, Government and Economy in British West Africa, (New York: Bookman Associates, 1961), pp. 75-77.

The apathetic attitude of the management of these firms towards agricultural crop production is an important factor to consider in an analysis of the failure of the basis of capitalistic methods of production to be laid during this period.[12]

The government's policy towards the export trade sector was essentially one of laissez-faire; the import-export firms performed their various functions without supervision or control save the produce inspection system instituted in the 1920's to ensure acceptable preparations of certain crops like cocoa, coffee, piassava and ginger for export purposes.

However, by the outbreak of the war, certain changes in export crop marketing were introduced: The United Kingdom Ministry of Food through a new agency, the West African Produce Control Board (WAPCB) became the sole central buying agent of Palm Kernels and oil seeds. The former marketing institutions - European and Levantine import-export firms cum middlemen - still remained; the only difference was that the WAPCB was the sole central buying agent.

Salient Features in the Development of the Export Crops: The Oil Palm, Cocoa and Coffee, 1900-1946

The beginnings of an organized agricultural export economy in

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[12] T.J. Alldridge, Op. Cit., p. 78:
"The development of the country through the cultivation and utilization of the unused wealth of natural products, are questions which many a trader refuses to entertain for a moment, much less debate. If someone attempts to put before him, he is promptly confronted by too well-known remark: 'I'm here to buy the produce that's brought to my store and to sell imported goods; that's what I'm here for'."

Sierra Leone were laid by the declaration of the Protectorate in 1896 and the concomitant introduction of British norms of law and administration.[13] By the former event, the virgin forest resources of the hinterland were added to the trade and service based economy of the colony, where attempts in the nineteenth century at the creation of an agricultural-based economy had failed.[14]

The advantages of British administration were twofold: first, the creation of a stable government system (a vast contrast to the hitherto disrupting frequent inter-tribal and/or -chiefdom feuds, the disintegrating aftermath of the slave trade of the last century); and second the establishment of a legal milieu more conducive to the transactions of modern commercial practices.[15]

The Oil Palm

The Oil Palm is widely believed to be indigenous to West Africa where its most profuse wild occurrence occurs in the World. The original spread of the trees in this region is ascribed to artificial means - human beings, birds and other animals - as the crop grows only in places where man has been active.[16]

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[13]Kenneth Little, The Mende of Sierra Leone, revised edition; (London: Routledge and Kegan Paul, 1967), p. 90
"The British domination was secured by 1898, and agriculture had then replaced warfare as the principal form of economy."

[14]N.A. Cox-George, Finance and Development in West Africa: The Sierra Leone Experience (New York: Humanities Press, 1962), p. 161.

[15]Kilson, Op. Cit., pp. 14-17.

[16]H.R. Jarrett, "The Oil Palm and its Changing Place in the Economy of Sierra Leone", Geography, Vol. XLII (January, 1957), p. 51.

In Sierra Leone the export trade of the commodity started by the middle of the nineteenth century, making its most phenomenon expansion in the inter-war period (Table 2-1). For some half a century, it formed the largest percentage share of total domestic export in tonnage and value and its revenue contributions in the form of export taxes and cash incomes to the native farming peoples were immense.

The antiquated technological character of the oil palm industry has been a point of concern in official circles since the inter-war years. This trait is eminently amplified in two areas, namely: one, the system of collection of exports from wild palm culture; and two, the onerous labour-intensive methods of preparation for export purposes.[17]

These defects were considered, even at this stage, as not being conducive to the creation of a good industry. The disadvantages connected with this set-up were obvious: production from the wild palm culture produced a lower yield per tree compared with plantation culture; and moveover, the native system of processing the commodity was labour intensive, time consuming and overtly onerous and demanding.[18]

The efforts of the Department of Agriculture relative to the crop were directed, albeit in a slipshod manner, to solutions of these problems. Its strategies during this period comprised two programs: (a) to improve the local varieties of the crop by proper cultivation practices, and (b) to encourage the breeding of the better Nigerian

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[17]Childs, Op. Cit., p. 17.

[18]Ibid.

TABLE 2-1

PALM KERNEL EXPORTS: VOLUME, VALUE AND VALUE PER TON, 1901 - 1945

YEAR	EXPORT VOLUME (TONS)	EXPORT VALUE (Le)	EXPORT VALUE PER TON (Le/Ton)
1901	20,475	322,498	16.1
1902	22,623	402,712	17.8
1903	22,760	392,862	17.3
1904	25,101	427,462	17.0
1905	28,151	538,710	17.1
1906	30,373	640,854	20.7
1907	34,942	895,602	25.6
1908	33,721	665,674	18.6
1909	42,897	975,228	22.5
1910	43,031	1,289,368	29.9
1911	42,892	1,314,696	30.7
1912	50,751	1,586,356	31.2
1913	49,201	1,841,886	37.4
1914	35,915	1,118,616	31,0
1915	39,624	1,108,066	25.4
1916	45,316	1,361,410	30.0
1917	58,020	1,684,016	29.0
1918	40,816	1,366,274	33.4
1919	50,622	2,382,214	47.1
1920	50,425	2,802,352	55.5
1921	40,409	1,360,138	33.9
1922	49,029	1,444,806	35.0
1923	59,545	1,936,594	37.5
1924	61,117	2,200,000	35.8
1925	63,231	2,300,000	36.5
1926	65,000	2,240,000	34.4
1927	65,436	2,160,000	32.3
1928	67,105	2,300,000	34.3
1929	60,205	1,760,000	29.1
1930	56,641	1,339,182	23.1
1931	54,462	899,484	16.5
1932	77,162	1,374,954	17.8
1933	64,083	845,648	14.8
1934	68,655	840,560	10.5
1935	78,019	1,166,290	14.9

TABLE 2-1
(Continued)

YEAR	EXPORT VOLUME (TONS)	EXPORT VALUE (Le)	EXPORT VALUE PER TON (Le/Ton)
1936	84,578	1,620,576	19.2
1937	76,776	914,060	23.1
1938	63,697	920,000	14.4
1939	69,747	920,000	13.2
1940	53,283	670,000	14.1
1941	37,154	480,000	12.7
1942	20,540	320,000	15.8
1943	36,463	760,000	20.9
1944	45,642	1,180,000	25.8
1945	47,341	1,260,000	26.5

Sources: Sierra Leone, Department of Agriculture, Annual Reports 1913 to 1945; T.N. Goddard, The Handbook of Sierra Leone (London: Grant Richards Ltd., 1925) p. 139.

Angola variety.[19] Unfortunately, because of financial constraints and lack of trained extension workers, feverish efforts in these directions had virtually no effect on the industry.[20]

The same story is true of the discussions about plantation culture during this period. In the 1920's when production of oil palm from the modern plantation culture of the Far East started, the technological inadequacies of the Sierra Leonean Industry assumed an ominous dimension.[21] The view that if the Sierra Leonean industry was to survive as a viable concern in the face of the imminent foreign competition plantation type culture should immediately replace the current wild growing variety was presented as an inevitable alternative.[22] Here too, regretably, financial restrictions and the entrenched laissez-faire policy combined to nullify all concrete efforts.

The results, then, of all these abortive attempts to modernize the oil palm industry by the department of Agriculture yielded no tangible changes not because of the lack of constructive proposals about the solutions of the problems but because of failures to implement them. The industry, not surprisingly, emerged out of the inter-war years markedly unchanged. By 1948, Childs observed that: "...palm

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[19]Sierra Leone, Department of Agriculture, Annual Reports 1912-1945.

[20]Ibid.

[21]Bryne, Op. Cit., p. 3-4.

[22]M.T. Dawe and F.J. Martin, "The Oil Palm and its Problems in Sierra Leone", (Proceedings of the First West African Agricultural Conference, Ibadan, Nigeria, 1927).

produce is still being collected and prepared almost entirely on primitive lines, and almost the whole of the fruit and kernel come from wild strains".[23] Even today, this character of the oil palm, unfortunately, still holds.[24]

The Oil Palm and Transportation Development

Among agricultural exports, the oil palm benefited the most from the construction of the railway.[25] Passing through the heart of the Southern palm belt, the railway brought into the nexus of export production regions in the interior which because of their distances away from the coast and/or navigable rivers had hitherto played virtually no part in the trade.[26] The impact of this mode of transportation on the production of the crop was remarkable; within a few years of its construction in 1895, oil palm exports increased to an all-time peak record (Table 2-1).[27] Unfortunately because of the absence of good feeder road systems within this period, the influence of the

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[23] Childs, Op. Cit., p. 17.

[24] There was an unsuccessful experiment at the beginning of this period by the UAC Group to run an oil palm plantation at Yonibanah.

[25] Allan McPhee, Op. Cit., "The railway taps the district producing palm oil and palm kernels, and aids the rivers which are used for the carriage of goods except in the wet season". p. 109.

[26] Peter Mitchell, Op. Cit., pp. 208-209.

[27] Sierra Leone, Department of Agriculture, The Palm Kernel Trade of Sierra Leone. Research Department Bulletin, No. 1 (February 1927), p. 4.

railway was largely confined to areas a few miles around its route.[28] The development of feeder roads was only seriously prosecuted during the postwar years.

Palm Kernel Exports 1900-1945

Exports of Palm Kernels enjoyed a tremendous expansion in the interval 1900 to 1945.[29] From a volume of some 20 thousand tons at the start of the period, palm kernel exports rocketed to about 85 thousand tons in 1936, the peak period; incidentally also the highest recorded export volume of the crop to date (Table 2-1). Excepting the low tonnage periods of the two world wars and the depression, export tonnages experienced an increasing secular trend for the interval. The boom period for palm kernel exports was 1932 to 1938 when the annual export tonnages were maintained above the 60 thousand ton mark. The lowest tonnage export value occurred in 1942, the middle of the second World War.

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[28]Despatch 11/11/04, Governor Probyn to the Colonial Office entitled: 'Scheme for Inaugurating a Roads Department and Road Construction.' (As quoted by J. Barry Riddel, Op. Cit., p. 23). Governor Probyn observed:

> "...Until proper roads are made however the (palm oil) can only be brought to the railway as a head load in kerosene tins, etc., and it is obvious that as long as this is the case the oil will only be collected from places in the near vicinity of the railway...I have consulted those who best know the country and the new conditions of trade brought about by the expansion of the railway and there is a concensus of opinion that until good roads are made the benefits of the railway will be relatively small and that natives, unless aided, would not greatly improve the roads for many years.

[29]Palm kernel and palm oil - the two important products of the oil palm - were the chief exports of this period. However in this analysis, only palm kernel exports will be discussed.

Some irregularities characterized the unit export value of the crop; from 1900 up to the start of the depression there was a marked increasing trend. After which, persistently low fluctuating values set in. The maximum unit value of the crop occurred in 1920 and minimum in 1933.

In normal times within this period - that is excepting periods as the war and the depression - we can identify the following factors as influences on export supplies:[30]

(1) The producer prices for the crops;

(2) The profuse occurrence of the trees around towns and villages which made for easier collection and processing;

(3) The weather;

(4) The impact of the railway.

The Industrial Revolution and the coinciding expansion in the European population were undoubtedly important influencing factors on demand.[31] Palm kernel oil was needed for cooking purposes by the increasing population and for greasing the numerous machines.

Three countries absorbed almost all the export of the crop within this interval: the United Kingdom, Germany, and the Netherlands.[32] The U.K. was on the whole the largest purchaser of the crop for the entire period; however, the German market in the non-war years was also

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[30] Sierra Leone, Department of Agriculture, Annual Reports 1913-1945, Op. Cit.

[31] McPhee, , Op. Cit., pp. 30-31.

[32] O.P. Bagai, Op. Cit., Table 5.

important. In fact from 1900 to 1913 Germany was the most important export buyer and proved a tough competitor for the U.K. in the inter-war years.[33] The Netherland market was important only after 1932, when it began accounting for about one-quarter annually of total exports up to the outbreak of the war.

Cacao

The origins of the cacao culture in former British West Africa is traditionally traced to the date 1879 when a Fanti farmer made away with some beans to Ghana from the Portuguese Islands of San Thomé and Fernando Po where at that time the crop was prosperously cultivated.[34] The exact date of the start of the Sierra Leone industry is conjectural; there is, however, an account of cacao growing in the Sherbro Island as far back as 1895.[35] One thing is certain though, namely, that substantial development in the cultivation of the crop really commenced only after the 1920's.[36] The Department of Agriculture Annual Report records that since around 1910 efforts were made by its staff to introduce the crop in the Southern Region and that development was put back by the First World War.[37]

The South-Eastern Sector because of its ideal climatic and soil

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[33]Sierra Leone, Department of Agriculture, The Palm Kernel Trade of Sierra Leone. Op. Cit., pp. 3-4.

[34]Allan McPhee, Op. Cit., pp. 40-41.

[35]D.H. Urquhart, Op. Cit., p. 20.

[36]Gerald T. Rimmington, "Cocoa in South-Eastern Sierra Leone", Geographical Journal, 127 (March 1961), p. 134.

[37]Sierra Leone, Department of Agriculture, Annual Report for 1922, p. 6.

conditions was able to become even at these early years an important producing section in the country.

The early development of the crop involved a partnership between the Colonial Government and the small-scale peasant producers of the crop. Because it was a new culture, its specialized climatic, soil conditions and export preparations were unknown to the native farming population. As such the extension services of the Agriculture Department were important for the early development of the crop. By the 1920's, agricultural department extension personnels were engaged in giving out seedlings "assisting in the selection of suitable sites for plantations and also in laying them out, as well as giving instructions as to their care and to the fermentation of the bean".[38] Commenting on the contributions of these workers, Childs observed in 1948 that "the encouraging developmentof the cocoa industry owed much to the instruction and assistance given by the Agricultural Department and Provincial Administration".[39]

An equally important factor was the enthusiasm of the peasant producers to the new crop. In accordance with the government's policy of laissez-faire actual cultivation of the crop was left to the farmers whose reception to the new culture was encouraging. They obtained seedlings from the agricultural department extension workers, made permanent plantations, a practice alien to their traditional farming practices, and learned the rudimentary methods of preparing the crop

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[38]Sierra Leone, Department of Agriculture, Annual Report for 1922, p. 39.

[39]H. Child, Op. Cit., p. 23.

for export purposes.[40]

The results from these early endeavours were markedly noticeable within the last two decades.

Cocoa Exports, 1924 to 1945.

Cocoa export volumes generally had an increasing trend within the period 1924 to 1945 (Table 2-2). 1934 to 1942 was a high volume period, with 1940's 13,260 cwt. as the peak volume for the entire period. The lowest export volume occurred in 1943. From the value angle, 1934 to 1942 were also boom years. The unit value on the other hand give a different picture: the early years, 1925 to 1930 were the high price years. Persistently low unit values were recorded in the last years.

Coffee

The origin of coffee culture in Sierra Leone is obscure. There is an account of importations from Sao Thome of the specie liberica in the last years of the eighteenth century. However, the crop never really became established in the economy of country until the early years of this century, especially with the creation of the Department of Agriculture in 1911.

As in the case of cocoa, the advisory and extension services

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[40]Allan McPhee, Op. Cit., p. 41: Around 1926, a contemporary observer of these changes was all but fascinated:

> "What enhances the wonder (that is referring to the phenomenon expansion of the crop) is that cocoa is such a recent importation into West Africa and yet the ultra-conservative native has thrown aside age-old cultures to embrace it as if nothing else mattered.

TABLE 2-2

CACAO EXPORTS: QUANTITIES, VALUE AND UNIT VALUE

1924 - 1945[a]

YEAR	EXPORT QUANTITIES (CWT)	EXPORT VALUE (Le)	EXPORT VALUE PER TON (Le/Ton)
1924	404	1,058	2.62
1925	1,000	3,120	3.12
1926	820	2,680	3.27
1927	1,540	5,672	3.68
1928	1,680	7,320	3.78
1929	1,920	6,796	3.54
1930	1,600	5,096	3.19
1931	1,220	2,068	1.69
1932	1,680	2,590	1.60
1933	1,340	1,980	1.98
1934	2,760	3,510	1.27
1935	3,280	4,086	1.25
1936	6,020	11,084	1.84
1937	5,300	17,660	3.33
1938	7,680	11,698	1.53
1939	11,340	17,464	1.55
1940	13,260	26,098	1.97
1941	11,900	25,682	2.16
1942	12,680	26,506	2.17
1943	120	148	1.23
1944	10,080	14,226	1.51
1945	7,340	10,156	1.38

a Export Quantities before 1924 insignificant.

Source: Sierra Leone, Department of Agriculture, Annual Reports 1913 to 1945; Op. Cit., Bagai, Op. Cit., Table 7.

of this department were vital to the crop's development.[42] Its staff distributed from their nurseries at various substations brands of stenophylla and liberica and gave valuable instructions on the preparation of the crop for export. An important change in the 1920's and 1930's relative to the development of the crop was the emphasis put on the cultivation of the Robusta variety.

The reception of the crop by the peasant farmers was also encouraging: they enthusiastically learnt the rudimentary methods of planting and preparing the crop for export purposes. However, what was achieved within this period was the laying of the basis of this culture in the economy.[43]

Exports, 1924 to 1945.

Coffee export volumes from 1924 to 1935 had a painful growth experience (Table 2-3); quantities were less than the 200 cwt level in all but one of the years. After 1935, export volumes picked up, although in a pronouncedly fluctuating manner. They reached the peak volume 4,000 cwt in 1945. Export values were similarly depressed from 1924 to 1935 (Table 2-3). Values started improving in 1936 from which period a persistently increasing although fluctuating trend was maintained till 1945, the peak year. The unit value, on the other hand, had its prosperous phases in the early years of the period; and were

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[42]Sierra Leone, Department of Agriculture, Annual Reports, 1914-1945.

[43]There is a detailed account of the development of this crop in an anonymous phamphlet (mimeo): Coffee, probably prepared by the Department of Agriculture around 1961.

TABLE 2-3

COFFEE EXPORTS: VOLUME, VALUE AND UNIT VALUE,

1924 - 1945[a]

YEAR	VOLUME (CWT)	VALUE (Le)	UNIT VALUE (Le/Cwt)
1924	109	792	7.08
1925	94	628	6.68
1926	61	402	6.59
1927	78	364	4.67
1928	58	434	7.48
1929	32	224	7.00
1930	109	378	3.46
1931	139	464	3.41
1932	47	130	2.77
1933	60	192	3.20
1934	165	494	2.99
1935	228	598	2.62
1936	2,703	6,480	2.40
1937	1,155	2,402	2.08
1938	758	1,586	2.10
1939	869	1,498	1.72
1940	501	1,236	2.47
1941	1,730	7,832	4.53
1942	66	340	5.15
1943	610	2,838	4.65
1944	1,836	11,366	6.19
1945	4,393	20,134	4.86

a Export Quantities before 1924 negligible.

Source: Sierra Leone, Department of Agriculture, Annual Reports 1924 to 1946; O.P. Bagai, Op. Cit., Table 6.

markedly depressed from 1929 to 1940. The last four years witnessed a gradual improvement.

Some Theoretical Explanations of African Export Development Processes

The initial development processes of tropical African countries through export production has been explained by means of two theories. One type, applicable to countries like the Congo, Rhodesia and Zambia, where at some early times foreign-owned and foreign-directed mines and/or plantations were established, stresses the strategic role of such external enclaves as leading institutions for change. Baldwin's study of the economy of Zambia (former Northern Rhodesia) for the period 1920 to 1960 ably demonstrates this type of development. He posits that the foreign-owned and foreign-managed copper industry's technological production functions were important in generating changes in other areas of the economy, 'modern' as well as traditional.[44]

On the other hand, studies of West African countries such as Ghana and Nigeria have emphasized the crucial role played by peasant farmers in the development process.[45] The activities of thousands of small-holding farmers in these areas, and not just the colonial modernization and foreign commercial institutions, it has been found, were crucial factors accounting for early export developments.

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[44]Robert E. Baldwin, Economic Development and Export Growth; A Study of Northern Rhodesia, 1920-1960. (Berkeley: University of California Press, 1966).

[45]See for example: Polly Hill, The Migrant Cocoa Farmers of Southern Ghana; A Study in Rural Capitalism. (Cambridge: Cambridge University Press, 1963); and Gerald K. Helleiner, Peasant Agriculture, Government and Economic Growth in Nigeria. (Homewood, Illinois: Richard D. Irwin, Inc., 1966).

The vent-for-surplus model whose original formulation could be traced to Adam Smith's Wealth of Nations, has proved useful in the analysis of this type of export developmental patterns.[46] Hla Myint, who gave current popularity to this theory, has argued that the transitional phases of export productions for overseas market of certain countries in South-East Asia and Africa approximate this model.[47]

Basically, the vent-for-surplus model asserts that international trade could offer a vent for the surplus capacity of a country with sparse population in relation to natural resources. Its salient features involve the following elements:

(1) Given, a previously isolated country entering international trade, possessing a surplus productive capacity in the form of either land or labour or both,

(2) A basic factor influencing the development of exports of such a country is the relationship between its population and natural resources .

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[46]Recently Carl Eicher in a study of agricultural development in Nigeria observed that 'the "vent-for-surplus" model is useful..in analyzing the development process in African farms operating in an environment of "unlimited supplies of land"'.:

"The dynamics of long-term Agricultural Development in Nigeria" Journal of Farm Economics, Vol. 49 (December 1967), p. 1160.
For a sophisticated exposition of the model see Gerald Helleiner, "Topology in Development Theory: The land Surplus Economy (Nigeria)", Food Research Institute Studies, Vol. XLVIII, No. 1 (February 1966), p. 181-194.

[47]H. Myint, "The 'Classical Theory' of International Trade and Underdeveloped countries", Economic Journal, Vol. 68, (June 1958), pp. 315-337.
This article was an attempt to explain the dynamic changes connected with international trade by means of a dynamic model - the vent-for-surplus model - rather than the static theory of comparative advantage.

(3) The function of trade in a country with some surplus productive capacity "is not so much to reallocate the given resources as to provide the new effective demand for the output of the surplus resources which would have remained unused in the absence of trade".[48]

Specifically applied to peasant export production, our major concern, Myint opined that:

> "...the application of the "vent-for-surplus" theory is fairly straight forward. Here, unlike the mining and plantation sectors, there has not been a significant inflow of foreign investment and immigrant labour. The main function of the foreign export-import firms has been to act as middlemen between the world market and the peasants, and perhaps also to stimulate the peasants' wants for the new imported consumers' goods...peasant export production expanded by using methods of production more or less on the same technical level as those employed in the traditional subsistence culture. Thus the main effect of the innovations, such as improvements in transport and communications and the introduction of new crops, was to bring a greater area of surplus land under cultivation rather than to raise the physical productivity per unit of land and labour. Yet peasant export product usually managed to expand as rapidly as that of the other sectors while remaining self-sufficient with respect to basic crops. Here, then, we have a fairly close approximation to the concept of a pre-existing surplus productive capacity which can be tapped by the world-market demand with a minimum of external resources.[49]

Szereszewski, in a study of the early development of the Gold Coast (modern Ghana) cocoa industry from 1811 to 1911, a period of an export boom for the crop employs the vent-for-surplus model to explain changes in the economy. He observed that it was the interaction of factors such as effective export demand, a largely underemployed farming community, abundant natural resources vis-avis the population, the presence of some

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[48]Myint, Op. Cit., p. 321.

[49]Myint, Op. Cit., p. 327.

modernizing institutions and the exercise of entrepenuerial qualities by the peasant farmers that were responsible for development.[50]

Also Gerald Helleiner in a work dealing with peasant agriculture in Nigeria from 1900 onwards makes use of the model. Central to this analysis in explaining the remarkable expansions of exports in this period was a "surplus-land" model on the vent-for-surplus line.[51]

Some economists like Marvin Miracle and Sara Berry appear to be of a different opinion; Miracle considers the model as "demonstrably misleading" for the following reasons:

> "By emphasizing the impact of access to new overseas markets and ignoring the overland export markets that West African economies have been involved in for as long as we have record, and by postulating idle resources although in fact we have little empirical evidence to support this assumption...Myint's model makes it easy to think of rural African economies as stagnant until colonial powers evoked a surplus and provided a vent for it.[52]

Berry in her study of Western Nigeria's cocoa industry for the period 1890 to 1940 made some modifications in the model.[53]

The Vent-For-Surplus Model and the Sierra Leone Peasant Export Experience

Palm Kernel Exports 1900-1946

The expansion in total agricultural exports from 1900 to 1945

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[50]R. Szereszewski, Structural Changes in the Economy of Ghana (London: Weidenfeld and Nicolson, 1965), p. 106

[51]Gerald Helleiner, Peasant Agriculture, Government and Economic Growth in Nigeria (Homewood, Illinois: Richard D. Irwin, 1966).

[52]Marvin Miracle, Review of Carl K. Eicher and Carl Liedholm (edited) "Growth and Development of the Nigerian Economy" (East Lansing: Michigan State University Press, 1970) in American Journal of Agricultural Economics 53 (1) February 1971.

[53]Sara Berry, "Cocoa in Western Nigeria" (Doctoral Thesis, University of Michigan, 1967).

was largely due to increases in palm kernel exports. The expansion in palm kernel exports was helped by the development of a rudimentary transportation network, the profuse occurrence of the trees around villages and towns and an effective overseas demand.

This expansion in exports hardly affected the nature of the industry, which remained even up to the postwar years 'primitive', depending on wild yielding varieties of the crop. As such, expansions within this period can be styled as "growth without development".[54]

The vent-for-surplus model appears to approximate development within this sector. First, the expansion of the oil palm industry was accomplished largely by the activities of peasant producers; the export-import firms acted solely as marketing agencies. Second, the collection and processing of the crop "made little demand on the energy and thought of the natives and they affected no revolution in the society of (Sierra Leone)".[55] Third, export market production hardly resulted in a change in the level of technology of the industry; accordingly, improvements in the infrastructure of the country such as the building of the railway that took place, merely resulted in the extension of production into new areas. Fourth, the fragmentary information on the population at this time seems to suggest that vis-avis its moderate size there were abundant natural resources especially land.[56]

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[54]This epithet is borrowed from R.W. Clower and others, Growth Without Development: An Economic Survey of Liberia (Evanston: Northwestern University Press, 1966).

[55]McPhee, Op. Cit., pp. 39-40.

[56]Cox-George, Op. Cit., pp. 112-20.

Fifth, the production of internal market and/or subsistence crops were within the same period stabilized or improved, suggesting that there existed some idle productive capacity.[57]

Cocoa and Coffee Exports 1900-1945

There were three interwoven strands in the development of cocoa and coffee exports from 1900 to 1945: the role of the extension services of the department of Agriculture, the improvement in the transportation network of the country and the enthusiastic receptions of the crop by the indigenous farmers.

Unlike palm kernel export expansion, cocoa and coffee export production made radical changes in the economy. As Sara Berry points out cocoa (and we may add coffee) production and processing involve certain re-allocation and recombination of resources "which over time...altered the organization and structure as well as the volume of productive activity"[58] in the area concerned. Integral to such changes is the exercise of certain basic entrepenuerial qualities by indigenous farmers: risk-taking and investment.

More specifically, the following reasons raise some doubts about the unqualified application of the vent-for-surplus model to cocoa and coffee export developments. First, the effects of the extension services of the Department of Agriculture radically altered the farming habits of native farmers who cultivated both crops. Second, factors such as good crop husbandry and better export preparation methods, it

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[57] Sierra Leone was up to the mid-1950's self-sufficient in local food production and in fact had net surpluses for exports for rice and palm oil: S.L. Department of Agriculture, Annual Reports 1913-1945.

[58] Sara Berry, "Cocoa and Economic Development in Western Nigeria", in Carl K. Eicher and Carl Liedholm (ed.), Op. Cit., p. 26.

would seem, equally accounted for export development with such factors as bringing of newer areas into production. Third, there seems no doubt about the fact that the introduction of these cultures in the farming system of Sierra Leone was a remarkable phenomenon.[59]

Nonetheless, even in this case, the existence of some idle productive capacity to which international trade gave a vent seems plausible (in conjunction with the other factors mentioned above) in explaining the upward export production trends.

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[59]M.A. Havinden, "The History of Crop Production in West Africa: A Bibliographic Guide", Economic History Review 23 (3) December 1970; p. 545: "The rise of cocoa as an export staple since 1890 has been one of the most dramatic events in the history of West African agriculture."

CHAPTER III

THE DEVELOPMENT OF THE AGRICULTURAL EXPORT SECTOR 1946 TO 1968

The dominant theme in postwar agricultural export development was the decline in overall agricultural exports that set in around the mid-1950s. This overall decline in agricultural exports along with their dwindling contributions to total export earnings represent the two most important structural changes in the economy of Sierra Leone in recent years.

Postwar agricultural export development, unlike the period 1900 to 1945, cannot be fitted into any simple theoretical model such as Hla Myint's vent-for-surplus or Lewis's Labour Surplus Theories partly because of the interplay of a host of non-market-forces within this period and partly because contraction rather than expansion was the change that had to be explained.

Institutional Factors and the Development of the Agricultural Export Sector

A noticeable feature of the period 1946 to 1968 relative to public policy was the trend towards active participation of the Government in the agricultural export economy.[1] Functions hitherto performed

[1]The details of postwar agricultural development policies have been well analyzed in W.N. Thompson, "Agricultural Policy and Planning in Sierra Leone"; Paper presented at an ADC/MSU Seminar on East and West African Agricultural Development. East Lansing, Michigan, June 1968; Mimeo. Saylor, Op. Cit., pp. 74-93.

by the government within this sector such as agricultural export extension services and the construction of a basic transportation system were intensified; but new features such as biological research stations (the West African Oil Research Institute and the West African Cocoa Research Institute),[2] deliberate government planning, cooperatives and the control of agricultural marketing through a statutory export monopsony, the SLPMB were introduced. The economic and social dislocation of the diamond rush of the 1950's into the Kono, Kenema and Bo districts also had important repercussions for the development of agricultural exports within this period.[3]

Fragmented Government Planning, 1946 to 1961

Childs' Plan

A Plan of Economic Development for Sierra Leone by Hubert Childs was one of the first Sierra Leonean attempts at development planning and was agricultural based.[4] The broad purpose of the plan was "...to indicate measures and requirements necessary to achieve a substantial

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[2]After the independence of the ex-British territories in West Africa; these research stations were re-organized at national levels.

[3]It has been observed that the worst effects of this rush, which involved a large-scale migration of agricultural workers, were on palm kernel and rice productions:
H.L. Van der Laan, The Sierra Leone Diamonds, An Economic Study Covering the Years 1952-1961 (London: Oxford University Press, 1965); and A.E. Shanu-Wilson, "The impact of increased Diamond Production on Agriculture in Sierra Leone" (M.A. Thesis, Southern Illinois University, 1966).

[4]Childs' plan was intended to improve on a ten-year plan drawn up in 1946 on typically 'primitive' lines.

increase in economic production and therefore in the prosperity and welfare of the people of Sierra Leone...more specifically the aim, in regard to agricultural produce is to double output for the five years".[5]

This task, as Childs saw it, was to be achieved through three main strategies,[6] namely:

1. The development of the transportation network of the country especially through a vigorous campaign of road improvements.
2. Agricultural export production expansions and improvements concentrated in the development of the oil palm industry by the encouragement of large-scale production, extensive planting of better yielding varieties, and the installation of mechanical devices.
3. The involvement of the rural sectors through the administrative system, the District Councils, in the urgent problem of rural and national development.

Agricultural exports occupied a special place in this plan for the economic development of Sierra Leone. He identified the following factors as prerequisites for their development: Scientific research; growth in skill and knowledge; introduction of mechanical processes; improved marketing arrangements and cooperation efforts.[7] However, the novel feature in his proposals for agricultural development was his

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[5] Ibid., p. 1.

[6] Ibid., p. 24.

[7] Ibid., p. 24.

request for harnessing both 'grass root' and central government agencies in the implementation process. Childs considered these institutions vital to his scheme for agricultural export development.[8]

Childs' developmental strategy for transportation improvements, intimately interwoven in his overall plan for increasing agricultural export productivities, emphasized rigorous road building programs. The railway was a central institution in this process; the local government road programs were to cater chiefly though not exclusively for its needs.[9]

His proposals for specific agricultural export crops included targets to be achieved in the next five years. For palm kernels, cocoa and coffee he proposed the following changes:

1. Palm Kernels
    a. Improving the breed of the tree;
    b. Improving the methods of planting and cultivation;
    c. Improving the methods of extraction of the oil from the kernels;
    d. Improving transport facilities to reduce the labour of head-porterage;
    e. The establishment of efficient marketing arrangements.
2. Cocoa/Coffee
    a. Improving extension services (especially the use of district councils);
    b. Introducing better processing and preparation methods for export purposes;
    c. Combating pests and plant diseases.

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[8] Ibid., p. 1.

[9] Ibid., p. 26.

Childs' Plan: An Evaluation

The ceteris paribus assumptions under which Childs fixed his agricultural export production targets in 1948 were shattered by the dislocating consequences of the illicit diamond boom starting in the early 1950's. This event, unfortunately, acted as an inhibiting influence on the target achievement endeavours. True, some of the projects Childs proposed were completed by 1954, and coffee, ginger and piassava exports reached their planned output by that date. Yet, productions of most of the crops, including palm kernels and rice fell short of their targets.

But, even neglecting this extraneous occurrence, it appears doubtful whether Childs' bold and imaginative propositions would have worked in any case. The problems had to do with the planning process itself. Firstly, the dearth of basic information about the country at that time, to which the author had himself drawn attention defeated the attempts to make forecasts. The basis for projected agricultural export production never really existed as very little or nothing was known about such important production data as soil conditions, the input-output relationships, the number of export trees and even of the acreages under production. Saylor succinctly summarized these defects when he observed that: "The Childs proposals were devoid of operational significance since they bore no known relationship to agricultural productivity."[10]

Secondly, Childs' trust in district councils as plan implementation

[10] Saylor, Op. Cit., p. 165.

mechanisms though commendable and bold was patently misplaced. These inexperienced, inadequately staffed and corruption-prone institutions simply proved unequal to the onerous duties. Childs, an experienced local administrator, should have foreseen these difficulties.

Nonetheless, the Childs' planning exercise had its obvious advantages with particular reference to agricultural export crops. The document contained the most sustained examination in recent years of the peculiar problems of these crops and concrete proposals for their solutions.[11]

David Carney's Ten-Year Plan[12]

Carney, on the eve of independence drew up what he referred to as "the first comprehensive development plan for Sierra Leone". Broadly the plan relied for the development of the economy mainly on two areas, industrialization and agricultural improvements.

The sections relating to export crop improvements suggested the following measures: widespread use of mechanical aids; new and better farming methods involving the propagation of improved varieties of seeds and plants; the use of fertilizers; the relief of agricultural indebtedness and lack of working capital by the provision of credit facilities; and transportation and communication improvements.[13]

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[11] Roy Lewis, "Agriculture and Planning in Sierra Leone", Corona, (June 1953), pp. 209-12.

[12] David Carney, Ten-Year Plan of Economic and Social Development for Sierra Leone 1962-63 to 1971-72. (Freetown: Government Printer, 1962).

[13] Ibid., p. 24.

Carney suggested two new measures for transforming the peasant export economy:

a. The diversification of the export base by the encouragement of the production of new crops like sugar, rubber, sisal and jute.[14]

b. The institution of plantation-type culture for such crops as palm kernels, cocoa and coffee.[15]

For implementation, he envisaged a partnership between government/public corporation and private enterprise:

> "The basic policy in connexion with the cultivation of these crops is to develop plantation culture under the auspices of the Marketing Board, the Ministry of Natural Resources and the Ministry of Trade and Industry. This... provides for partnership arrangements with private companies willing to enter into such arrangements for cultivation as well as processing and manufacturing by-products.[16]

Carney's Ten-Year Plan: An Evaluation

The Carney proposals for agricultural export development were far from being "comprehensive". As a matter of fact, it seems a disproportionately small space was accorded to the discussion of the many problems of this sector, given its enormous importance in the economy. Moreover, on a general level, the plan has been characterized as being "an unintegrated ad hoc capital expenditure program".[17] This defect is markedly discernible with respect to the disparate programs for agricultural export development: the absence of some coordinating institution

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[14] Ibid., p. 14.

[15] Ibid., p. 25.

[16] Carney, p. 24., Op. Cit.

[17] Saylor, Op. Cit., p. 167.

or idea about the development proposals for this sector was a pronounced weakness.

Probably, the two beneficial features of the plan were the bold and clear advocacy for plantation-culture in the export crop sector and the emphasis on the urgent need for quantitative information about the agricultural sector. Additionally, Carney's oft-grandiose strategies for general economic development have in many areas permanently left their marks on policy and program in recent years.

The Sierra Leone Produce Marketing Board (SLPMB) And The Export Crop Sector, 1949 to 1968

An institution that has markedly influenced the agricultural export economy for the last two decades is the Sierra Leone Produce Marketing Board (SLPMB). Since its formation in 1949 as a statutory export monopsony the Board has been responsible for the purchase, export and marketing of nearly all the important export crops.

Origins[18]

The West African Produce Control Board (WAPCB), formed in 1942 to control the export trade of former British West African dependencies, was the direct predecessor of the SLPMB. In Sierra Leone the WAPCB was given the sole responsibility to purchase at controlled prices all palm kernels and other oil seeds on behalf of the United Kingdom Ministry of Food. This wartime measure was made necessary by enemy action on the

[18]Peter Bauer, West African Trade, Op. Cit., pp. 263-275; and "The Sierra Leone Produce Marketing Board", A two-part series of Talks broadcast over the SLBS by Mr. P.P. Lawrence, Public Relations Officer (n.d. but probably around 1966). Mimeo.

shipment of the crop, and by the Japanese entry into the war which resulted in the loss to the Allies of the Far East Oil Fields. Why, after the war was the WAPCB not allowed to lapse but was instead converted into a marketing institution? Two reasons are normally given. The official view, given credence by the Nowell Commission,[19] was that the prewar marketing arrangements were chaotic and attended by violent producer price fluctuations. This state of affairs, especially with the control of trade in the hands of a few European and Levantine export-import firms, it was argued, was unfavourable to the peasant producers.

Peter Bauer has suggested another reason: a case of self-perpetuation:

> "...the presence of the Board at the end of the war was a principal factor in the establishment of the Marketing Boards. Once an organization such as a statutory export monopoly has been in existence for some years, strong tendencies for self-preservation come into play, since it creates strong administrative intellectual and material vested interests.[20]

The latter view played an important part in the designation of the functions of the SLPMB.

Functions

The functions of the SLPMB were set forth in Section 15 of the 1949 ordinance that created it. Because of their importance in subsequent discussions it is worth quoting them:

> "It shall be the duty of the Board to secure the most favourable arrangements for the purchase, export and marketing of Sierra Leone produce and to assist in the development by all possible means of the agricultural industry of Sierra Leone for the benefit and prosperity of the producers and the areas of production."

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[19] British Government, "Report of the Commission on the Marketing of West African Cocoa", Cmd. 5845, 1938.

[20] Bauer, Op. Cit., p. 267.

The Board was given power to: buy produce; store, transport, process and sell produce either locally or for export; appoint agents to carry out any of the above powers; fix prices to be paid to the producers; and prosecute anyone who paid lower prices to the producers of the commodities in the scheduled commodity list.

Structure

The Board is a statutory public corporation whose membership has changed over the years; in recent years it comprises:

> A Chairman and a Managing Director appointed by the Minister of Trade and Industry.
>
> Five Members appointed by the Minister of Trade and Industry.
>
> Five Members nominated by the Minister of Agriculture and Natural Resources to represent producers.
>
> Three Members nominated by the Ministry of Agriculture and Natural Resources after consultation with the Minister of Trade and Industry.
>
> Two Members appointed to represent the Chamber of Commerce.

The SLPMB as a Price Stabilization Agency

Gerald Helleiner noticed that: "The 'convention wisdom' on the subject of Marketing Boards in primary-exporting economies has long been that their principal function is that of domestic stabilization".[21] Unlike Nigeria whose Boards were Helleiner's subject, the emphasis is not misplaced in Sierra Leone. Up to 1964 domestic price stabilization was undoubtedly the principal function of the SLPMB. The rationale of the SLPMB's domestic stabilization policy has been

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[21]Gerald K. Helleiner, Op. Cit., p. 185.

vaguely stated as aiming "at protecting the farmers and the nation from the unsteady trends in the world market for our schedule commodities and encouraging farmers to work hard and improve their output."[22] To perform this function the Board maintained a reserve and helped by the favourable world primary commodity prices, the Board was able in the 1950's to amass a substantial amount.

In their classic though controversial 1952 article,[23] Bauer and Paish questioned the purpose behind a stabilization scheme whose benefits had until that time been taken as self-evident. They pointed out that stabilization was ambiguous as a policy guide, as it implies various and at times conflicting meanings such as prices, money and real incomes.

In Sierra Leone, the evidence over the years seems to lend support to the claim that the Board succeeded in stabilizing both intra-seasonal and inter-seasonal prices to producers. Saylor complains, however, that these policy goals were achieved at the expense of "setting producer prices well below current year market prices". This goes a long way in explaining how the huge reserves were accumulated in the fifties.[24]

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[22] SLPMB, "Your Questions Answered" (A pamphlet put out at about 1966), p. 7.

[23] P. Bauer and F.W. Paish, "The Reduction of Fluctuations in the Income of Primary Producers", Economic Journal (Vol. 62) 248 (December 1952) pp. 750-780.

[24] A goodly number of essays, mainly of a critical nature, already exist on the domestic price stabilization policy of the Marketing Boards. The Nigerian and Ghanaian Boards, however, were chiefly used as case studies. Two studies, also of a high standard, on the Sierra Leonean Board and two Reports of Commissions of Enquiries have been published. The two studies are in David Carney, Government and Economy in British West Africa, Op. Cit., pp. 103-112 and pp. 152-168 and Ralph G. Saylor, Op. Cit., pp. 107-126.

The Sierra Leone Produce Marketing Board as a Development Agency

Economic development of the export crop sector was another function of the SLPMB. Helleiner has proposed that marketing boards should be appraised on the basis of their activities as development agencies since economic growth cannot be divorced from stabilization.[25]

From 1949 to 1961, the operations of the SLPMB relative to development took two main forms: the management of palm oil pioneer mills and the provisions of grants for research, feeder road buildings and extention services.

The Operations of Oil Palm Pioneer Mills

Of importance to peasant farmers and the government were the operations of the Board in running oil palm pioneer mills. Large amounts of the Board's running costs were, for many years, used in this scheme, which involved the operation of a number of mills erected at various times between 1949 to 1964 at various points in the producing regions. The mills, save the one situated at Masanki, initially relied on the supply of palm fruits by peasant farmers from wild cultures. The operating expenses of these mills, which were frequently high, were chiefly accounted for by labour costs for running the mills, depreciation and repair expenditures, payments to peasant farmers for fruit collections and grants to District Councils for feeder road constructions.

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[25] Helleiner, Op. Cit., p. 186: "there may be legitimate doubt as to the possibility of separating stabilization from development issues". (Emphasis his).

An important feature of a pioneer mill from an economic point of view is its heavy operating expenses.[26] Subsequently, for it to be run profitably it is necessary: first, to keep it working for the entire year at a level approximately approaching full capacity; and second, to minimize most of the operating costs. The implication of the first condition is that the mill should be supplied throughout the working year with a regular supply of fruits.

The original intention behind the oil palm pioneer mill scheme was to test the economic efficiency of running such mills in the oil palm industry with a view to complete mechanization of the entire industry. Events turned out unfavourably; during the interval under study the only mill that made profits was the Masanki Mill which got its fruit supplies from its own plantation containing the improved varieties. The rest of the mills which relied on wild fruit culture, showed heavy annual losses.

The following factors have been given as the causes for the losses:[27] inadequate supply of fruits because of dependence on the low yielding wild palm varieties; technical difficulties due to the low level of expertise of the staff; and an indifferent pricing policy pursued by the Board.[28]

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[26]For an elaboration of this point and on the Pioneer Mill Scheme generally see, B.O. Nnorom, "Sierra Leone Produce Marketing Board and Agricultural Development since 1949", (B.A. dissertation, Fourah Bay College, 1964); Mimeo.

[27]SLPMB, Annual Report, 1949-61.

[28]SLPMB, Annual Report, 1957; p. 8: 'The price paid to producers whilst being considered too low by them is in the Board's opinion too high in relation to the world market value of the products, palm kernels and oil'.

By 1954, in a move to halt this undesirable state of affairs, the SLPMB proposed a plantation program. The policy statement proclaimed:

> "The Board has carefully reviewed the results of the mills and is convinced that these mills can be an economic success, but only if drawing the greater part of their fruit supplies from cultivated improved varieties of oil palm maintained under plantation conditions in the areas adjoining the mills. It also appears to the Board that the future prospects for a successful oil palm industry depend on cultivated high yielding oil palms, to produce at least the country's requirement of palm oil for local consumption, and it is hoped a surplus for export, together with the palm kernels. The Board is, therefore submitting proposals to government in which the Board would undertake raising oil palm seedlings at the mills and planting them out."[29]

Provisions of Grants for Research, Feeder Road Constructions and Extension Services

The SLPMB in pursuing its aims to aid the development of the agricultural export crop sector offered annual grants to District Councils in order to (a) assist them in the upkeep of their oil palm and coffee/cocoa nurseries; (b) enable them to build feeder roads in palm oil districts; and (c) offer prizes at agricultural fairs. The Board also made huge grants to Biological Research Stations, chiefly the West African Institute for Oil Palm Research (WAIFOR) and the West African Cocoa Research Institute, and other ad hoc activities related to certain problems of the sector, such as the cocoa Virus Disease Survey (Table 3-1).

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[29]SLPMB, Annual Report, 1957; page 8.

TABLE 3-1

SLPMB: DETAILS OF GRANTS FOR RESEARCH AND TO DISTRICT COUNCILS FOR FEEDER ROAD CONSTRUCTIONS AND EXTENSION SERVICES 1949-1961

Year	Leones		Research Grants (To Waifor, Wacri) and Njala
	Grants to District Councils for Development of Oil Palm, Cocoa and Coffee Industries		
1949	-		-
1950	21,600		2,60
1951		94,522[a]	
1952		211,282[a]	
1953		268,110[a]	
1954	96,846		40,000
1955	75,796		35,078
1956	3,574		32,000
1957	28,502		34,650
1958	19,642		52,468
1959	28,748		74,650
1960	28,182		70,650
1961	17,144		-

a Breakdown of figures not available. These figures include: district councils grants and research grants.

Source: SLPMB, Annual Reports and Accounts for 1949 to 1961.

Plantation Development by the SLPMB[30]

From a predominantly price stabilizing institution, the SLPMB evolved into a development agency in the post-independence years. A grandiose scheme for the development of plantation culture in the country was central to this change. Although the actual implementation of the project was attended by haste, the policy evolved over a period of years.

In 1959, the Board presented a plan to the government which involved among other things, it taking over through a new production branch from the department of Agriculture: three oil palm plantations (at Waterloo, Sahn-Malen and Kasse), the replanting and running of the Masanki Plantation and the establishment of two other plantations in the Northern and South-Eastern Provinces. The impetus for a change to plantation culture for export crop production was heightened by the two post-independence agricultural sectoral plans, Carney's plan and the pace of political development.

However, the government was unable to do anything about the scheme until 1964 when the "Five-Year Industrial Plantation Development Plan", the most ambitious agricultural plan to date, was promulgated. This plan envisaged the development of 440,000 acres of plantation by the Board assisted by the Department of Agriculture for the cultivation of oil palm, rubber, pineapple, citrus fruits, coconuts, benniseeds and

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[30] Sierra Leone Trade Journal, Vol. 5 No. 2 (April/June 1965); pp. 70-72: "SLPMB Five-Year Industrial Plantation Development Programme"; and W.N. Thomson, "Agricultural Policy and Planning in Sierra Leone since Independence", Op. Cit.

chillies. Also, the Board was to establish five factories: a palm kernel mill, an oil crushing factor, an instant coffee plant, a brushing and fiber factory and a feed mill.

The SLPMB embarked on the scheme with unprecedented speed and zeal. It immediately set about to buy land and other properties, to engage workers and to solicit foreign financial assistances to help cover the estimated cost of 29,463,168 leones (£14,731,584). When the much-hoped-for foreign assistance was not forthcoming, it utilized the price stabilization reserve accumulated in the 1950's and drained it away. Before long the scheme ran into serious difficulties and it became clear that "the plantation and industrial program exceeded the financial capabilities of the Sierra Leone Government and the technical and managerial knowledge available to see the plans through to a successful conclusion".[31] The SLPMB emerged at the end bankrupt and administratively disorganized.

The most trenchant criticism of the project is the reported statement of the former Military Head of State of Sierra Leone, Brigadier Juxon-Smith:

> "In an ill-conceived effort to expedite both the agricultural and industrial development of Sierra Leone, the Produce Marketing Board embarked upon agricultural and industrial ventures which subsequently proved fatal and led finally to the illiquidity and bankruptcy of the Board.
>
> Large plantations were started for which no proper feasibility studies had been prepared, and for which adequate financial resources had not been secured. The Board, therefore, had to divert its working capital from its marketing operations to its investment activities thus making financing of its day-to-day operations more and more difficult. In addition, the stabilization fund was tapped to finance these ill-prepared projects.

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[31] W.N. Thomson, Op. Cit., p. 7.

> Repeatedly, the Government itself in a strigent financial position, had to come to the rescue of the Board by making Government Funds available to it.
>
> It will be remembered that in late 1966 and in early 1967 the Board's financial position had become so desperate that buying agents and farmers could no longer be paid their dues. This led to drastic reduction in agricultural produce channelled through the Board. Far reaching measures were necessary to put the Board on a sound footing again.
>
> The Board's agricultural and industrial projects were thoroughly checked by experts and all those ventures which were not economically viable were discontinued. In addition loan capital of Le3.9 million from the Standard Bank of West Africa was obtained to provide the Board with indispensable working capital to resume its normal marketing operations."[32]

SLPMB: An Evaluation

The development policy of the SLPMB was largely parochial in scope. For example, the improvements in the oil palm industry it was advocating were essentially geared to acquiring sufficient supply of improved fruits for its pioneer mills. The abortive plantation project of the Board was also patently a waste of producers' funds.

Additionally, the general policy of the Board of aiding the development of the agricultural export sector through assistance to district councils, weak and ineffectual implementation bodies, lacked drive and direction.

Also, the indifferent pricing policies pursued by the Board acted as an inhibiting factor in the growth of the export sector; these policies tended to approximate the cause of "corporate omnipotence" described by Bauer and Paish:

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[32]Reported in Sierra Leone Daily Mail, February 23, 1968, p. 4. (quoted in W.N. Thomson, "Agricultural Policy since Independence", Op. Cit., p. 7).

> "Very probably a major factor influencing the price policies, of these Boards was a possibly unconscious inclination to place the interests of the organizations above that of their constituents. It is a familiar tendency of administrators of large-scale organizations to be more concerned with the strength, growth and progress of their organizations than with the interests of the members they supposedly represent. After a period, the administrators may even come to regard their constituents or members as being opposed to themselves or to the organization, and they consider that funds paid out to their constituents are lost or dissipated. The policies of the Boards and their statements alike suggest that their administrators are more concerned with the extension and strengthening of the organizations than with the interests of producers."[33]

The pricing policies of the Board from 1949 to 1961 appear to follow closely this statement; for within this period, the accumulation of reserves, it seems, was the raison d'etre of the SLPMB.

The marginal returns derived from the huge grants given for research to such organizations as the WAIFOR were definitely less than their costs. This unfortunate situation is largely attributed to the fact that the results of the research efforts were rarely passed on to the peasant producers. David Carney, reflecting on this aspect of the Board's activities, reasoned that more money should have been given for incentive purposes and less for research:

> "A deliberate policy of planting oil palms on individual farms or plantations is necessary for a prosperous oil palm industry. A first step is an incentive grant by the Board for every seedling planted by farmers...No amount of official exhortation by the Department of Agriculture or by District Officers and District Councils is likely to work."[34]

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[33]Bauer and Paish, "The Reduction of Fluctuations in the Income of Primary Producers", Op. Cit., p. 762.

[34]David Carney, Op. Cit., p. 157.

Co-Operatives and the Agricultural Export Economy[35]

The Co-operatives are among the institutions that have been influential in the agricultural export sector since 1949. These organizations were first started among the rice farmers of the Scarcies under the auspices of the Department of Agriculture by 1936 and by 1949 they were firmly established in the major crop producing regions. A fair proportion of cocoa/coffee farmers were members of these institutions.

Two forms of the movement can be distinguished, namely: (a) Thrift and Credit; and (b) Marketing, the latter being very active in the agricultural export sector. These societies had the following functions: to arrange on the best possible terms the marketing of crops; to advise and assist members in improving farming methods and in the preparation and grading of produce for marketing; to provide facilities for storage, inspection and grading of these products; and to give credits to members from funds largely provided by the Co-Operative Department.[36] Johnston argued that the Co-operatives performed these functions quite well.

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[35]Robert E. Johnston has done an extensive study of these organizations in the Sierra Leone environment: "The Transfer of the Co-Operative Movement in a Non-Western environment: Its Development, Its Economic, Social and Political Funtions, and Its Role in Sierra Leone", (Doctoral Dissertation, University of California, Los Angeles, 1968).

[36]J.S. Bangura,"The Co-Operative Movement in Sierra Leone, Bank of Sierra Leone, Economic Review, June 1967. See also, Robert E. Johnston, "Cooperatives and Agricultural Production in Sierra Leone", Rural Africana, Spring 1969.

CHAPTER IV

FACTORS INFLUENCING THE TRENDS AND ANNUAL FLUCTUATIONS IN THE VOLUMES OF AGRICULTURAL EXPORTS, 1953 to 1968

Statistical data such as the volumes or prices of agricultural commodities are usually presented in forms that comprehend "chronological variations"[1] - that is, as time series. Four types of variations in time series can be distinguished: (a) secular trends; (b) cyclical variations; (c) seasonal movements; and (d) annual fluctuations. Periodic movements and irregular fluctuations have also to be taken into account.

A secular trend (or trend) of a time series denotes those features of the series observed within a long period that emphasizes its overall performance.[2] Trend exercises are similar to historical generalizations in the sense that they both encompass the same preoccupation, namely essaying "a descriptive summary which will bring out clearly the fundamental factors which have been at work...".[3]

Cyclical variations can be regarded as substantial long-term fluctuations around a trend that do not necessarily display regular patterns. On the other hand, seasonal movements of a time series are

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[1] F.C. Mills, Statistical Methods (London: Pitman, 1942) p. 252.

[2] Edwin Frickley, "The Problems of Secular Trends", Review of Economics and Statistics, No. 16 (December 1934), p. 199.

[3] Ibid., p. 200.

those variations that exhibit "regularly recurring patterns during any subperiods of any specified period of time".[4]

In this chapter, attention will be focussed on the factors that influenced the trends and annual fluctuations in the export volumes of palm kernel, cocoa and coffee within the period 1953 to 1968.

Palm Kernels

a. Trend. The volume of palm kernel exports for the period 1954 to 1968 manifested a noticeable downward trend.[5] The highest volume exported within this interval took place in 1954, the start of the period, approximately 68,000 tons and the lowest in 1968, roughly 34,000 tons (Table B-1).

It seems that three factors[6] largely accounted for the declining trend: (a) the technological decadence of the industry; (b) the policies of the government and the SLPMB; and (c) the long-term economic and social effects of the diamond rush.

b. Annual Fluctuations.[7] During the years 1953, 1954, 1955, 1957, 1960, 1963, 1964 and 1967, there were violent year-to-year decreases in the export volumes of palm kernels; the remaining eight years in the series experienced relatively moderate annual increases (Table 4-1).

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[4]William C. Merrill and Karl Fox, Introduction to Economic Statistics (London: John Wiley, 1970), p. 456.

[5]The trend for the period 1954 to 1968, fitted by least squares method was $Y_c = 53,319 - 1,266X$ (origin: 1961; X unit: one year).

[6]The factors were selected by a priori reasoning; conclusive evidence is a matter of empirical research.

[7]The discussions on the factors influencing the annual fluctuations of palm kernels, cocoa and coffee export volumes that follow, will only attempt overviews of the detailed explanations outlined in Tables 4-1, 4-2 and 4-3.

TABLE 4-1

PALM KERNEL EXPORTS: VOLUME DETERMINANT FACTORS, 1953 to 1968

YEAR	PRODUCERS[a] PRICE (Leones/Ton)	VOLUME[a] (Tons)	VOLUME DETERMINANT FACTORS[b]
1953	63.25 (-)	68,904 (-)	1. Decrease of farming population attributed to "more children going to school". 2. Work onerous.
1954	57.80 (-)	68,080 (-)	Decrease of farming population.
1955	57.80 (-)	57,640 (-)	'The movement of large numbers of the farming population away from farming to diamond mining...'(1)
1956	57.80 ( )	57,650 (+)	Low output of previous period almost maintained because: 'The large number of Sierra Leoneans and "strangers" still engaged in the attractive industry of diamond digging does not suggest any immediate return of labour to Agricultural pursuits...'(2)
1957	57.80 ( )	52,970 (-)	1. Decrease of farming population due to migration to the Diamond fields. 2. "Additionally the wild oil palms are neglected and less interest is apparently being taken by the women who usually collect a great number of fallen nuts for cracking because of the increased well-being connected with the diamond rush."(1)

a. Plus sign shows increase over previous period; and minus, vice versa, decrease.

b. The information summarized in this section were gathered from (1) Sierra Leone. Annual Reports of Department of Agriculture, 1954 to 1964; (2) SLPMB, Annual Reports 1954 to 1968; and (3) Bank of Sierra Leone, Economic Reviews and Annual Reports, 1964 to 1969.

TABLE 4-1
(Continued)

YEAR	PRODUCERS[a] PRICE (Leones/Ton)	VOLUME[a] (Tons)	VOLUME DETERMINANT FACTORS[b]
1958	57.80 ( )	54,610 (+)	1. "Diamond mining continued to attract many younger men, but some have begun to return to agriculture, perhaps disillusioned at not having been able to get rich quickly, and the figures for palm kernel exports have risen slightly, after several years of decline"(1)
1959	63.20 (+)	57,530 (+)	1. Improved producer prices. 2. Return to farming of young men from diamond field.
1960	63.20 ( )	54,530 (-)	Re-adjustment phases after diamond rush.
1961	63.20 ( )	57,760 (+)	Return from diamond fields of some of young men.
1962	54,20 (-)	60,970 (+)	Moderate interest shown by farmer.
1963	54.20 ( )	52,760 (-)	Low level of technology (large numbers of old trees and others maimed by the processing for palm wine) resulting in a lower yield per acre.
1964	60.00 (+)	42,000 (-)	Low level of technology: production from wild yielding varieties plagued by absolescence resulting in lower yield per acre.
1965	59.62 ( )	46,460 (+)	Low level of technology: production from wild yielding varieties plagued by absolescence resulting in lower yield per acre.

a Plus sign shows increase over previous period; and minus, vice versa, decrease.

b The information summarized in this section were gathered from (1) Sierra Leone, Annual Reports of Department of Agriculture, 1954 to 1964; (2) SLPMB, Annual Reports 1954 to 1968; and (3) Bank of Sierra Leone, Economic Reviews and Annual Reports, 1964 to 1969.

TABLE 4-1
(Continued)

YEAR	PRODUCERS[a] PRICE (Leones/Ton)	VOLUME[a] (Tons)	VOLUME DETERMINANT FACTORS[b]
1966	63.63 (+)	50,320 (+)	1. Higher price. 2. Moderately good weather.
1967	63.63 ( )	33,700 (-)	1. "The board, the sole buying organization for palm produce, coffee, cocoa...has recently undergone a serious liquidity crisis and delays in payments to buying agents have helped accentuate the squeeze conditions characterizing the Sierra Leone economy." Standard Bank, Economic Review, September 1967, p. 24. 2. Some 13,906 tons which could have been exported processed localled by the Palm Kernel Mill.
1968	61.43 (-)	52,760 (+)	Improved confidence in the Board and general stable economic conditions.

[a] Plus sign shows increase over previous period; and minus, vice versa, decrease.

[b] The information summarized in this section were gathered from (1) Sierra Leone, Annual Reports of Department of Agriculture, 1954 to 1964; (2) SLPMB, Annual Reports 1954 to 1968; and (3) Bank of Sierra Leone, Economic Reviews and Annual Reports, 1964 to 1969.

The diamond rush of the 1950's seems to be the most persistent factor responsible for the declines in volumes for most of these years: 1953, 1954, 1955, 1957 and 1958 (Table 4-1). The diamond rush into the Kono, Kenema and Bo districts in the 1950's affected the annual export of the crop in two ways: one, rural migration occurred away from agricultural export practices to the alluvial diamond industry; and second, it appeared that the increased affluence connected with diamond mining discouraged agricultural production such as export processing of palm kernel (for example in 1957).

However, the slowing down in alluvial diamond productions which necessitated the return of some of the young men to their villages, it seems, partly accounted for the slight fluctuating increases in palm kernel export volumes in 1958, 1959, 1961 and 1962.

In 1967, the results of the abortive grandiose plantation scheme which the SLPMB engaged in - leading to a squandering of its reserves and the exhaustions of its human and financial resources - began to have a dampening effect on agricultural export volumes. The failure of the Board to make prompt payments for crops delivered to its buying agents in the rural areas led to distrust of the organization. Added to this, in 1967, the uncertain political situation created by the pending 1968 general elections discouraged general economic activities including export crop production.

c. Price/Annual Volume Relationship. The price received by palm kernel producers was another factor that likely influenced yearly export volumes (Table 4-1 does not effectively bring out this fact). Saylor, the author that seriously considered this relationship concluded

from his regression studies of palm kernel exports after 1950 that there was evidence to show that annual export tonnages of the crop were correlated with current producer price and that when the real producer prices (that is, the producer price deflated by the consumer price index) were used in the calculation there were indications that the producers responded positively to these prices.[8]

To put these statistical conclusions in their right perspective, the following drawback involved in the study ought to be mentioned: ascertaining correctly the actual producer price received by the farmers. Although the SLPMB fixed scheduled minimum prices, buying agents in the rural areas were allowed to deduct from these prices the costs of transportation and storage; what price in the end the farmer received after these deductions was uncertain as Petch pointed out:

> I cannot say accurately, to what extent the price paid by the Board's agents to these traders is reflected in the price the traders pay to the farmer. A good amount of the information one gets on the subject is suspect...[9]

Concluding, annual prices as opposed to past prices, were one of the important yearly export volume influencing factors of palm kernels. This is largely due to the fact that with respect to this crop, farmers performed no planting investment but instead relied for export supplies on wild yielding varieties.

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[8]Saylor, Op. Cit., pp. 65-70.

[9]George A. Petch, Report on the Oil Palm Industry of Sierra Leone, (Freetown: Government Printer: 1956), Mimeo, p. 118.

Cocoa

a. Trend. The volumes of cocoa exports from 1954 to 1968 exhibited a distinct upward trend.[10] The highest volume exported took place in 1962, approximately 5,000 tons, and the lowest in 1954, approximately 2,000 tons (Table B-2).

It seems that three factors[11] were important for the increasing upward trend in volumes: (a) improved husbandry techniques; (b) the long-term effects of the services of the agricultural department and the co-operatives; and (c) the secular effects of high prices.

b. Annual Fluctuations. There were eight years with moderate yearly increments and another eight years with relative declines in the volumes of cocoa exports within the period 1953 to 1968. The number of new cocoa trees coming into mature bearing and going into obsolescence every year, appears to be the most recurring factor for the annual fluctuations. For example, the yearly increases that occurred in 1954, 1955, 1956, 1958, 1966 and 1967 were attributed to the latter factor, and the decreases of 1953, 1959 and 1968 to the former. As this was a new industry dating effectively from the 1920's, small wonder that the latter factor, namely, the number of new trees coming into mature bearing was the more prevalent factor.

Also, annual export volumes of cocoa were affected by natural causes: pests, diseases and the weather. The yearly decreases in volumes

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[10]The trend for the interval 1954 to 1968, fitted by least-squares method was $Y_c = 2{,}940 + 109X$ (Origin: 1961; X unit: one year).

[11]These factors were selected by a priori reasoning; conclusive evidence is a matter of empirical research.

TABLE 4-2

COCOA EXPORTS: VOLUME DETERMINANT FACTORS, 1953 to 1968

YEAR	PRODUCER[a] PRICE (Leones/Ton)	VOLUME[a] (Tons)	VOLUME DETERMINANT FACTORS[b]
1953	336 (-)	1,631 (-)	Poor crop year attributed to low technology of industry.
1954	523 (+)	1,738 (+)	1. Attractive prices. 2. New plantations coming into bearing.
1955	448 (-)	2,177 (+)	1. High yields. 2. New acreages coming into bearing.
1956	373 (-)	2,881 (+)	New Plantations coming into bearing.
1957	373 (+)	2,011 (-)	"Interest in Cacoaremains keen... nevertheless there was still a greater interest in coffee production compared to Cacao generally..."(1)
1958	373 ( )	2,828 (+)	"Cocoa production is continuing to increase gradually, with a more lively interest being received particularly because of the experimental work now being undertaken by the Department on the new station recently established at Kpuabu in the Kenema District with the assistance of a Colonial Development and Welfare grant." (1)
1959	373 ( )	2,617 (-)	"Small number of acreages coming into bearing." (1)

[a] Plus sign shows increase over previous period; and minus, vice versa, decrease.

[b] The information summarized in this section were gathered from (1) Sierra Leone, Annual Reports of Department of Agriculture, 1954 to 1964; (2) SLPMB, Annual Reports 1959 to 1968; and (3) Bank of Sierra Leone, Economic Reviews and Annual Reports 1964 to 1969.

TABLE 4-2
(Continued)

YEAR	PRODUCER[a] PRICE (Leones/Ton)	VOLUME[a] (Tons)	VOLUME DETERMINANT FACTORS[b]
1960	355 (-)	3,250 (+)	1. Larger increases came into production. 2. Good climatic conditions.
1961	355 ( )	2,792 (-)	1. Cocoa virus infection: capsid attack and Black Pod.
1962	290 (-)	4,705 (+)	"Interest in cocoa remained active, and a considerable amount of new planting was done, with continued interest in the maintenance of the existing plantation." (1)
1963	243 (-)	3,253 (-)	Partly due to cocoa virus infection attributed to capsid attack and Black Pod, and partly to smaller number of trees at nature bearing ages.
1964	261 (+)	3,220 (-)	1. Cocoa virus infection: capsid attack and Block Pod. 2. Prolonged dry season and only two harvests.
1965	269 (+)	2,390 (-)	1. Cocoa virus attack. 2. Unfavourable climatic condition.
1966	269 ( )	3,330 (+)	1. Improved producer price. 2. More acreage coming into bearing.
1967	258 (-)	3,510 (+)	1. More acreage coming into mature bearing. 2. Substantial success at arrest of cocoa disease.
1968	258 ( )	3,400 (-)	Only slight decline from previous period: 1. More Acreages coming into bearing. 2. Confidence in SLPMB.

[a]Plus sign shows increase over previous period; and minus, vice versa, decrease.

[b]The information summarized in this section were gathered from: (1) Sierra Leone, Annual Reports of Department of Agriculture 1954 to 1964; (2) SLPMB, Annual Reports 1959 to 1968; and (3) Bank of Sierra Leone, Economic Reviews and Annual Reports 1964 to 1969.

that took place in 1963, 1964 and 1965 were the results of the spread of cocoa virus infection and unfavourable climatic conditions. Favourable climatic conditions contributed to the increased volume in 1960.

c. Price/Annual Volume Relationship. Price, it seems, was not an important annual volume influencing factor: cocoa production requires a gestation period of around seven to ten years. Accordingly, responses to annual price increases or prospects of such increases take this form: farmers increase the number of cocoa trees under cultivation; these new trees' influence on export volumes will only be felt in another seven to ten years hence.

It could be validly argued - as Saylor does[12] - that increases in current prices could bring about an increased contribution of effort from the farmer (for example, encourage him to more frequently weed his plantation). It appears however, that such effort could only marginally have influenced year-to-year volumes.

Coffee

a. Trend. The export volumes of coffee from 1954 to 1968 enjoyed a distinct upward trend.[13] The highest volume exported within this period occurred in 1966 approximately 10,000 tons and the lowest in 1955, roughly 2,000 tons (Table B-3).

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[12] Saylor, Op. Cit., "...short-run changes in output (of cocoa) must result from greater or lesser work effort, changes in the weather, control of disease or other factors operative in the short-run". p. 71 (Emphasis mine).

[13] The trend for the period 1954 to 1968, fitted by least squares method was $Y_c = 4,117 + 172X$ (Origin: 1961; X unit: one year).

Three factors[14] were important for the upward secular trend within this period: (a) improved husbandry techniques; (b) long-term effects of the services of the department of agriculture and the co-operatives; and (c) the secular effects of high prices.

b. Annual Fluctuations. Just as in the case of cocoa, the most recurring factor responsible for fluctuations in annual volumes of coffee exports was the number of new trees coming into mature bearing or going into obsolescence each year (Table 4-3). The increases in volumes that took place in 1954, 1956, 1959, 1960, 1964, 1966 and 1968 were largely attributed to the latter reason.

Additionally, natural causes: the weather, diseases and pests were also influences on yearly volumes. The fall in annual volume in 1965, for example, was due to "the early and heavy rains" of that year.

It should be noted that the climatic factor was not so important for year-to-year decreases compared with cocoa, because the brand Robusta popularly grown in postwar years is tough and highly resistant to bad weather.

Pests (monkeys) partially accounted for the low volume exported in 1962.

c. Price/Annual Volume Relationship. The price factor was alluded to many times in the annual reports of the department of agriculture; for example, the low tonnages achieved in 1958, 1961 and 1967, the annual reports observed, were due to low prices.

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[14]These factors were selected by a priori reasoning; conclusive evidence is a matter of empirical research.

TABLE 4-3

COFFEE EXPORTS: VOLUME DETERMINANT FACTORS, 1953 to 1968

YEAR	PRODUCER[ab] PRICE (Leones/Ton)	VOLUME[b] (Tons)	VOLUME DETERMINANT FACTORS[c]
1953	424 (+)	1,050 (+)	"the increase in coffee exports was largely due to the price..."(1)
1954	498 (+)	2,393 (+)	1. Higher price. 2. New planting coming into mature bearing.
1955	302 (-)	2,092 (-)	1. Light crop. 2. Increased local consumption. 3. Smuggling to Guinea and Liberia.
1956	292 (-)	3,009 (+)	1. New planting coming into mature bearing. 2. Improved technological development: increased output per acre.
1957	318 (+)	3,758 (+)	1. Higher prices. 2. New planting coming into mature bearing and improved technology.
1958	356 (+)	3,348 (-)	Slight decrease from previous period attributed to lighter crop harvested and low prices announced late in the season.

[a] From 1953 to 1960, this crop was not under SLPMB, accordingly, producer prices approximated at roughly two-thirds of unit value export price during this period.

[b] Plus sign shows increase over previous period; and minuses, vice versa, decrease.

[c] The information summarized in this section were gathered from: (1) Sierra Leone, Annual Reports, Department of Agriculture 1954 to 1964; (2) SLPMB, Annual Reports 1954 to 1968; and (3) Bank of Sierra Leone, Economic Reviews and Annual Reports 1964 to 1968.

TABLE 4-3
(Continued)

YEAR	PRODUCER[a,b] PRICE (Leones/Ton)	VOLUME[b] (Tons)	VOLUME DETERMINANT FACTORS[c]
1959	266 (-)	4,931 (+)	1. Larger acreages coming into mature bearing. 2. More output per acre.
1960	170 (-)	5,094 (+)	1. Larger acreages coming into mature bearing. 2. More output per acre.
1961	160 (-)	5,024 (-)	The slight fall from previous year attributed to declining prices: "Farmers are reating to these low prices and many coffee plantations were neglected or totally abandoned during the year." (1)
1962	159 (-)	2,382 (-)	1. Ripe crops damaged by monkeys. 2. Low prices offered.
1963	177 (+)	3,895 (+)	1. Higher prices: 'the increase in price has resulted in full harvesting and better maintenance of the farm.' (1)
1964	235 (+)	6,420 (+)	1. Higher prices. 2. Larger numbers of acreages coming into mature bearing.
1965	269 (+)	3,550 (-)	"The export value of coffee...fell significantly, partly because of early and heavy rains in 1965." (3)
1966	269 ( )	9,630 (+)	1. Attractive prices and large number of trees coming into mature bearing.

[a] From 1953 to 1960, this crop was not under SLPMB, accordingly producer prices approximated at roughly two-thirds of unit value export price during this period.

[b] Plus sign shows increase over previous period; and minuses, vice versa, decrease.

[c] The information summarized in this section were gathered from: (1) Sierra Leone, Annual Reports, Department of Agriculture 1954 to 1964; (2) SLPMB, Annual Reports 1954 to 1968; and (3) Bank of Sierra Leone, Economic Reviews and Annual Reports 1964 to 1968.

TABLE 4-3
(Continued)

YEAR	PRODUCER[a,b] PRICE (Leones/Ton)	VOLUME[b] (Tons)	VOLUME DETERMINANT FACTORS[c]
1967	268 (-)	2,830 (-)	1. Poor volume in the year because of lack of confidence in the SLPMB which failed to pay promptly because of internal financial problems.
1968	291 (+)	3,400 (+)	1. Slightly better prices. 2. More trees coming into mature bearing.

[a]From 1953 to 1960, this crop was not under SLPMB, accordingly producer prices approximated at roughly two-thirds of unit value export price during this period.

[b]Plus sign shows increase over previous period; and minuses, vice versa, decrease.

[c]The information summarized in this section were gathered from:
(1) Sierra Leone, Annual Reports of Department of Agriculture, 1954 to 1964; (2) SLPMB, Annual Reports, 1954 to 1968; and (3) Bank of Sierra Leone, Economic Reviews and Annual Reports 1964 to 1968.

The role of annual prices in influencing volumes can be identified in two situations: a high price differential between Sierra Leone and its two neighbouring countries (Liberia and Guinea) usually did encourage smuggling (for example in 1955) to these countries when the Sierra Leone local prices were demonstratively lower than theirs. Also low local export prices did encourage increased home consumption of coffee to the detriment of export volumes. Secondly, it could be argued here - as we did for cocoa - that farmers did react to depressed current prices by re-allocating less work effort to the production of the crop, and vice versa for high prices.

For example, the annual report noticed that in 1961 "Farmers (were) reacting to...low prices and many coffee plantations were neglected or totally abandoned during the year".

However, it seems very likely that these reactions to current prices generally accounted for only small effects on annual export volumes.

On the whole, it seems price was not an important annual volume determinant factor. This is because, just as in the case of cocoa, coffee production involves a gestation period of around five to seven years duration.

Past Studies on the Trends in Volumes of Agricultural Exports with Special Reference to Palm Kernel's Downward Trend

The Annual Reports of the deprtments of agriculture stressed two factors in the 1950's in explaining the downward trend of palm kernel volumes: (a) the diamond rush of the 1950's and (b) the cursory

and/or non-commitment attitude of the farmers:

> The alarming decline in palm kernels exports...has been occasioned because the younger men who harvested the fruit have been absent in the diamond areas, and because the majority of farmers have yet to regard oil palm as a crop. They exploit the wild palms only if there is no other way of supplementing the family budget.[15]

Implicit in this observation are the importance of the labour input (seriously depleted by the agricultural labour migration during the diamond boom) and short-time preference on the part of the farmer with respect to palm kernel production.

The SLPMB Annual Reports noted the effects of the diamond boom on agricultural export production. Additionally it identified a basic volume determinant factor, namely the technological modernization of the industry when it observed that: "the future prospects for a successful oil palm industry depend on cultivated high yielding oil palms".[16]

Economists writing about the postwar volume determinant factors of the agricultural export sector, because of the pervading influence in this area of the SLPMB whose raison d'etre in the 1950's was price stabilization, emphasized the price element. Nnorom[17] enumerated three

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[15]Sierra Leone, Department of Agriculture, Annual Report, 1957, p. 2.

[16]SLPMB, Annual Report 1954, p. 8.
This view was not new, Childs in examining the various factors responsible for the declining trend of the industry in the 1940s looked at the problem from a negative angle: Op. Cit., p. 16:

> the oil palm industry follows haphazard lines. Indeed, it is questionable whether an industry can be referred to at all, since it is more in the nature of a family occupation in which women and children engage in their spare time...At best, the collection of palm fruit is a laborious business...It is therefore not surprising that little more of this work is normally done than is necessary.

[17]Nnorom, "SLPMB and Agricultural Development since 1949", Op. Cit.

factors as important for export volumes: (1) prices; (2) the influence of weather; and (3) the standard of living of the population; but concludes that "movement in prices exerted the greatest influence".[18]

Also, Ralph Saylor emphatically stated that "the pricing practices of the SLPMB were of equal importance (that is with other factors as the rural migration of the diamond rush and alternative productions) in retarding the growth of agricultural export production since 1950".[19] Later on, elaborating on this point, Saylor hypothesized that:

> The net effect of SLPMB's pricing policy has been the stimulation of subsistence production and the maladjustment of resources between agricultural production and agricultural processing. As a result, the growth of the agricultural sector has been reduced from what it would have been had the board not existed or had permitted producer price to follow world market prices closely.[20]

Saylor's analysis was startling on one respect, namely, the categorical indictment of the SLPMB with agricultural export volume declines.

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[18] Ibid., p. 41.

[19] Saylor, Op. Cit., p. 41.

[20] Ibid., p. 176.

CHAPTER V

SUPPLY AND THE SUPPLY DETERMINANT FACTORS OF PALM KERNEL EXPORTS

Response relation researches[1] of an empirical nature focus attention on two related problems:[2] (a) the factors responsible for shaping the planting decisions of the farmers; and (b) the correspondence between acres planted and output harvested.[3] One of the following methods have been used to work out regression analysis of factors at work on the supply function of tree crops.[4] The first method involves the usage of current prices and a time variable; the

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[1]Response relation empirical researches are constructed from two methods: (1) production data; and (2) time series statistics. Discussions here deal with the time series variety.

[2]W.W. Cochrane in an excellent article advocated for a 'a subtle difference' between the terminologies, supply relation or supply function and response relation or response curve: "By the term supply relation or supply function, economists in the equilibrium tradition have in mind how the quantity of a product offered for sale varies, as its prices varies relative to other product prices, for some given time period and for a given state of the arts of technology...By the term response relation or response curve, economists have in mind, or should have in mind it is argued here, how the quantity of a commodity offered for sale varies with changes in the price of the commodity...it is concerned with the output response to a price change by whatever means that response takes place - whether through the employment of more or less resources, the modification of the fixed plant or through technological advance...": "Conceptualizing the supply Relation in Agriculture", Journal of Farm Economics, Vol. 27 (Dec. 1955), pp. 1162-3) (Emphasis his).

[3]Merrill J. Bateman, "Aggregate and Regional Supply functions for Ghanaian cocoa, 1946-1962", Journal of Farm Economics, Vol. 47(2), (May 1965), p. 237.

[4]Merrill J. Bateman, "Supply Relations for tree crops in less developed areas", Paper read at the Agricultural Development Council - University of Minnesota Conference on Supply and Market Relationships for Peasant Agriculture, Minneapolis 18-20 February 1966, p.7. Mimeo.

time variable is included to comprehend short-term responses, and the price factor secular trends. By the second method instead of current prices, lagged prices are substituted to estimate the long-run responses. "In most cases...the author looked at a lag between planting and mature bearing and introduced one price variable which was lagged the same number of years".[5] The last method has been the more popular one among authors: Peter Ady, Robert Stern and Ralph Saylor, for example, in their various works on West African tree crops, employed this approach.[6]

The question of correctly specifying the planting-output relationship represent the most delicate aspect of this method.[7] The most likely area for pitfalls involves the non-recognition of the existence of output before the stage of mature bearing. "The assumption employed (by some writers) is that no output is obtained from the tree until it reaches a stage of mature bearing. This is unrealistic."[8] The critical stages in model buildings on these crops involves the construction of two sets of equations: one establishing the connection between potential output and the stock of trees, and the other describing the variables functionally relating actual and potential outputs.[9] "Once

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[5] Ibid., p. 7.

[6] Peter Ady, "Trends in cocoa production", Oxford University Institute of Statistics Bulletin, Vol. III (1949), pp. 389-404; Robert Stern, "The determinants of cocoa supply in West Africa", In, I. G. Steward and H.W. Ord., (eds.) African Primary Products and International Trade, (Edinburgh: University Press, 1966), and Saylor Op.Cit., pp. 58-73.

[7] Bateman, "Supply Relation for Tree Crops", p. 18.

[8] Ibid., p. 7.

[9] Peter Ady, "Supply functions in Tropical Agriculture", Oxford University, Institute of Statistics Bulletin, Vol. 30 (May 1968), p. 159.

the behavioral and agronomic interconnections relative to planting and output have been determined"[10] the way is paved for the calculation of the supply parameters.

Three problems are inherent in research endeavours on this topic. First we have the "difficulties created by the time lag between changes in agricultural capacity and changes in output".[11] Since the variables are distributed through time, there is a possibility that output response during the period may be compounded of output adjustments of a short-term and of a long-term nature.

Secondly, there is the problem of computing producers' price expectations. On this point Wah observes: "What producers' price expectations are and on what basis they are arrived at are psychological phenomena that are difficult if not impossible to observe. By introspection one would say that producers most probably take into consideration such things as the future demand and supply conditions, the trend of past prices and profits, the possibility of technological changes, the future changes in government economic measures, the future political situation, and so on".[12]

Thirdly, with particular reference to Sierra Leonean condition, there is the problem of lack of such important time series data as the acreage cultivated, the number of trees and the input-output relation ships.

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[10]Bateman, "Aggregate and Regional Supply Functions", p. 384.

[11]Peter Bauer and B.S. Yamey, "A Case study of Response to Price in Under-developed Country", Economic Journal (Dec. 1959), p. 300.

[12]F.C.K. Wah, "A Preliminary Study of the Supply Response of Malayan Rubber Estates between 1948 and 1959" Malayan Economic Review, VII (October 1962), p. 80.

A General Discussion of the Supply Determinant Factors of Palm Kernel Exports in Sierra Leone

Ideally, an investigation of the supply determinants of palm kernel export supply should be pursued from both theoretical and empirical levels.[14]

The empirical analysis has been abandoned for the following reasons: the lack of fundamental time series data of the crop such as acreages, number of trees and yield patterns; the non-existence of any meaningful cost of living index applicable to the rural sector; and the absence of a weather index.

Fortunately Ralph Saylor has quantitatively worked out by regression analysis the output-price relationship of palm kernel exports (and also cocoa) using a neoclassical supply function definition.[14] Accordingly Saylor assumed constant all other supply parameters. This pioneering exercise undoubtedly presented a too simplistic picture of the overall supply function; a more balanced approach, we think, ought to include among the regression variables such factors as acreages, technological change, the effects of the weather and alternative employment index. The present limited available data do not permit such an ambitious approach.

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[13]What we have in mind is similar to: S.A. Oni, "Production Response in Nigerian Agriculture: A Study of Palm Produce, 1949-66" Nigerian Journal of Economic and Social Studies, Vol. 11(1) (March 1969), pp. 81-92.

[14]Saylor, Op. Cit., pp. 58-74: He was concerned with testing the price responsiveness of Sierra Leonean farmers.

The Nature of the Oil Palm Industry

The Palm kernel export sector, to recall, is built on haphazard lines. Most of the trees from which the great bulk of export production are collected grow wild over a greater area of the country. The peasant processing methods are essentially primitive in nature; and moreover the work is onerous. With reference to a discussion of the supply determinant factors of the crop note should be taken of the following points:

(1) The absence of virtually any planting investment by the great bulk of the peasant farming population which entirely relies on fruits from wild stands.

(2) The limited amount of fixed factors devoted to the processing of the crop for export purposes. Accordingly, we can for practical purposes consider the response adjustments of output as essentially short-run in character.

(3) The cursory attention given to production activities by peasant farmers.

Resource Allocation in the Oil Palm Kernel Industry[15]

Assuming the Sierra Leonean peasant farmer acts rationally when making allocation decisions relative to his land and labour, he would weigh the net marginal contributions of each of the different production activities in which he deploys these factors. His land has a myriad of uses like growing his staple crops such as rice, cassava and potatoes

[15]This part of the analysis is largely drawn, with adjustments to suit the Sierra Leonean situation, from Edwin R. Dean's "Economic Analysis and African Responses to price", Journal of Farm Economics, Vol. 47(2) May 1965 pp. 403-5.

and cash crops such as cocoa and coffee. During the period covered by our analysis, 1954 to 1968, there were two main occupational avenues opened to him other than farm work: diamond digging and urban employment. Changes in the relative net profitability of any of these income earning activities would affect his relative allocation of his land and/or labour.

Supply Determinant Factors

From the fragmented literature on the crop, we can distinguish the following factors as important to the supply function of palm kernel, namely: (1) the producer price of the crop; (2) the relative net marginal profitability of the cultivation of other crops; (3) the size of the farming population; and (4) technological changes.[16]

a. Actual Producer Price and Palm Kernel Export Supply

The principal cost involved in peasant palm kernel production is mainly that of labour as the actual amount of other investments are negligible. Therefore the producer price received is really a renumeration for the arduous job involved, land playing very little part since the crop is harvested from wild stands growing in secondary forests and even on currently cultivated farm plots. From the writer's knowledge of this sector and discussions with a few farmers, it seems that the chief aim behind the exploitation of the crop is to mainly

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[16] S.A. Oni, Op. Cit., p. 82: identified the following variables in his study of Eastern Nigerian Palm Kernel: (1) actual producer price; (2) world price index of palm kernel; (3) acreages of palm kernel in production; (4) a weather variable; and (5) a time trend variable representing changes in technology.
The choice of variables is based in a priori reasoning; we are quite aware of the criticism that a definitive choice of variables and their significance in the supply model can only be settled by empirical investigation.

provide cash resources to disburse such monetary payments as school fees; tax payments; purchases of clothing, tobacco and other imported goods. Other exchange activities by the farmer - momentarily limiting ourselves to this sector only - such as the production of other cash crops like cocoa and coffee and sale of some internal market crops (that is the residuals after the farmer has satisfied his own needs) can also equally satisfy these needs. Accordingly, the higher the producer price received by the farmer (or the wider the margin between his cost and his gross returns) the greater the chances for higher export production of palm kernel, and vice versa.[17]

What producer price does the farmer mainly base his output decisions on? The producer price is fixed sometime before the buying season of each year and is rarely changed within this period. From the nature of the industry, it appears that it is this producer price (that is the current producer price in real terms) that influences the output decisions of the farmer. Saylor also discovered this same relationship; he writes: "The statistical evidence...indicated that the tonnage of palm kernels offered for sale is correlated with current prices..."[18]

b. <u>The Relative Net Marginal Profitability of the Cultivation of Other Cash Crops</u>

Another factor affecting the supply of palm kernel exports is

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[17]For example Nnorom observes: "This process of extracting (palm products by primitive methods) entailed tremendous amount of labour and as the prices of other primary commodities were soaring the shift from a more to a less laborious yet more renumerative production was a distinct possibility." <u>Op. Cit.</u>, pp. 24-25.

[18]Saylor, <u>Op. Cit.</u>, p. 66.

the relative net marginal profitability of the cultivation of other cash export crops such as cocoa and coffee. The crucial factor in this situation is the labour component as it is virtually the only input for which palm kernel competes with other inputs, land being not so important. Our hypothesis is that the farmer would allocate his resources to the areas of production where the expenditure of a marginal unit of labour would yield relatively higher returns. Applied to palm kernel export supply analysis, the implication is that the farmer would weigh the relative net marginal contribution of his labour among say cocoa, coffee and rice productions vis-a-vis that of palm kernel before he decides as to which line of export and/or cash productions he would expend his resources.

The evidence, from a purely theoretical viewpoint, appears not favourable to palm kernel production, arduous, exacting and relatively not very renumerative. Moreover its output per unit value or even per acre is low compared with say cocoa or coffee. Our conclusion is that if palm kernel production is based mainly on this evidence its export supply is not a particularly attractive line of activity compared with other cash export crops.

d. Technological Changes. The role of technological improvement in supply response has been succinctly defined by Nerlove and Bachman: "Through technological advance more output can be obtained with the same total resources; alternatively, fewer resources are required to produce the same output".[19]

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[19] Marc Nerlove and Kenneth L. Bachman, "The analysis of changes in agricultural supply: problems and approaches", Journal of Farm Economics, Vol. XLII, (August 1960), p.536.

How important has technological advance been to palm kernel supply exports? Historical studies demonstrate that the state of techniques in the oil palm sector has either remained static or has been declining. The assertion that the state of technological development in the palm kernel sector, dependent on wild culture has actually declined over the years, appears to be the more plausible proposition. The response of peasant farmers to technological changes such as laying out new large-scale plantations, cultivating improved seed varieties and buying mechanical implements like nut-cracking machines - inspite of the efforts of the Department of Agriculture through advisory and extension services - has almost been minimal over the years. At the same time the process of natural regeneration was not occurring at a fast rate. Small wonder that technological decadence, it appears, set in.

CHAPTER VI

SUMMARY AND CONCLUSIONS

This present study concerning the development of Sierra Leone's agricultural export economy focused attention on two phases: (a) 1900 to 1945, mainly a period of expansion; and (b) 1946 to 1968, mainly a period of contraction.

The distinctive features of the phase 1900 to 1946 included: a broadly laissez faire policy followed by the colonial government in both marketing and production; effective demand overseas for exports; the institution of government sponsored extension and research services; the construction of a rudimentary transportation network; and export expansion led by thousands of small-holding indigenous farmers. Hla Myint's vent-for-surplus model, which asserts that international trade could offer a vent for the surplus capacity of a country with sparse population in relation to natural resources was used to explain agricultural export expansion within this period.

This model fitted very well the expansion of palm kernel exports mainly because the export history of this crop within this period was basically one of "growth without development". However, the model proved inadequate in the explanation of cocoa/coffee export expansions. The reason was that cocoa and coffee export developments could not solely be ascribed to the existence of a surplus productive capacity to which foreign trade gave a vent as other factors such as the exercise by

indigenous farmers of basic entrepeneurial qualities, for example, investment, risk taking and the reallocation of resources, equally rank high as explanatory factors for expansions of these crops.

The pervading influences in the agricultural export economy within the postwar years included: deliberate government planning, the diamond rush of the 1950's, the control of agricultural marketing by a statutory export monopsony, the SLPMB and the activities of the cooperatives. Analysis of this period concentrated on the phase 1953 to 1968 which witnessed an overall decline in the volumes of agricultural exports.

However, cocoa and coffee exports prospered within this interval. The efforts of the department of Agriculture in extension and research, the cooperatives in marketing and the roles of peasant farmers in responding to economic incentives and enthusiastically learning to grow and process the crops for export purposes were largely responsible for these expansions. Briefly, cocoa and coffee export productions, originally built on modern plantation basis, became viable industries in the postwar years.

The same was not true of the oil palm industry. For many years export productions depended - as it still does - wholly on wild yielding varieties. Government officials have long considered the industry built on this basis as unsatisfactory and had suggested it be replaced by an enterprise based on large scale plantations. No constructive arrangements were made to implement this proposal either in the interwar or postwar years. Thus the industry remained 'primitive'.

Specifically, its hallmarks included - and still include - the following elements: (a) the absence of virtually any planting investment by the bulk of the peasant farming population which entirely relies on fruits from wild stands; (b) the limited amount of fixed factors devoted to the production and processing of the crop; and (c) the cursory attention given to production activities by farmers.

This tenuous technological base of the oil palm industry proved inadequate to resist the shattering dynamic changes of the fifties and the sixties. Its main export supply determinant factors that we identified - the current real producer price, the net marginal profitability of the cultivation of the crop, the size of the farming population, and technology - were all adversely affected by such disparate events as the diamond rush of the mid-1950s and the indifferent price policy of the SLPMB. These two factors have been the traditional reasons emphasized by authors such as Saylor and Nnorom to explain the postwar export downward trend of the crop.

To us however, the core of the problem was the obsolete technological base of the industry. Thus our policy conclusion: plantation-type cultures of the improved palm kernel varieties are the only hopes for the creation of a viable oil palm industry in Sierra Leone.

APPENDIX A

A NOTE ON THE STATUS OF AGRICULTURAL EXPORT STATISTICS IN SIERRA LEONE

The early data used in this study - on the general economic and agricultural backgrounds of Sierra Leone - were derived from two sets of works: the 1967 and 1970 National Accounts and the 1965 Agricultural Statistical Survey. Both sets of works were done by the eight-year old central statistics office. Owing to the fact that in both cases the exercises were pioneering endeavours, their results cannot be taken as entirely impeccable. Inevitably, a good amount of guess-work and vague assumptions were involved in their estimations.

This defect is particularly pronounced with regard to the agricultural economy, where as we have already pointed out exists a huge non-moneterized sector, the subsistence economy whose description in quantitative terms presents very treacherous problems. But even with internal market agricultural activities such as the domestic sale of crops, nothing reliable is known. The 1965 Agricultural Statistical Survey was the first systematic attempt to statistically map out the multifarious facets of this sector. As a pioneering exercise - like the National Accounts - its final results can only be described as rough.

Foreign Trade Statistics with Particular Reference to Agricultural Exports:

Foreign trade statistics represent one of the oldest and most reliable forms of statistics in Sierra Leone. Its collection and

analysis are as old as the colony; detailed annual descriptions of the numerous trade items were enumerated in such ancient official documents as the Blue Book, and after 1912 in the Annual Reports of the Department of Agriculture and the Annual Trade Statistics. Agricultural export reporting was enhanced with the creation of the SLPMB in 1949. This institution provided thorough statistics on the volume and producer prices of its controlled commodities.

Foreign trade statistics was put on a firmer basis especially for the years 1924 to 1964 by the work of O.P. Bagai, formerly of the Fourah Bay College. In his A Statistical Study of Exports of Sierra Leone, 1924 to 1964 Bagai collected and summarized from original sources the export statistics mainly under four headings: (a) Volume; (b) Value; (c) Unit Value and (d) Country of destination.

We have derived our statistics on the crops - Palm Kernel, Cocoa, and Coffee - from four main sources, namely: (1) The Annual Reports of the Agriculture Department; (2) The Trade Reports; (3) Bagai's A Statistical Study of Exports; and (4) The SLPMB Annual Reports. It is generally agreed that these statistics are for practical purposes reliable.

However, some fundamental data such as time series of acreages, number of trees and yield patterns of the crops were noticeably absent. Fragmentary informations of a 'one-shot' character were collected only in the 1965 Agricultural Survey; and even these are suspect.

TABLE A-1

VALUES AND PERCENTAGES OF TOTAL DOMESTIC EXPORTS: 1954 - 1967

(Value in Thousands of Leones)

YEAR	PALM KERNELS	COFFEE	COCOA	PIASSAVA	GINGER	KOLA NUTS	TOTAL AGRICULTURAL EXPORTS
1954	7,528 (34.3)	1,726 (7.9)	1,605 (7.3)	668 (3.0)	324 (1.5)	551 (2.5)	12,402 (56.5)
1955	5,019 (25.3)	948 (4.8)	1,482 (7.5)	430 (2.2)	715 (3.6)	424 (2.1)	9,018 (45.4)
1956	5,016 (20.7)	1,322 (5.5)	1,163 (4.8)	496 (2.0)	483 (.19)	214 (1.9)	8,694 (35.8)
1957	4,506 (15.0)	1,792 (6.0)	772 (2.6)	496 (1.7)	200 (0.7)	204 (0.7)	7,970 (26.6)
1958	4,896 (14.8)	1,790 (5.4)	1,744 (5.3)	474 (1.4)	140 (0.4)	270 (0.8)	9,314 (28.1)
1959	6,352 (19.4)	1,970 (6.0)	1,404 (4.3)	474 (1.4)	205 (0.6)	223 (0.6)	10,628 (32.4)
1960	5,834 (11.3)	1,300 (2.5)	1,392 (2.5)	546 (.1.)	146 (0.3)	300 (0.6)	9,518 (18.4)
1961	4,876 (9.7)	1,192 (2.4)	928 (1.8)	970 (1.9)	161 (0.3)	198 (0.4)	8,325 (16.5)

TABLE A-1 (Continued)

YEAR	PALM KERNELS	COFFEE	COCOA	PIASSAVA	GINGER	KOLA NUTS	TOTAL AGRICULTURAL EXPORTS
1962	4,904 (14.7)	618 (1.9)	1,502 (4.5)	490 (1.5)	291 (0.9)	162 (0.5)	7,967 (23.9)
1963	4,907 (9.6)	1,305 (2.6)	1,174 (2.3)	540 (1.1)	178 (0.3)	158 (0.3)	8,262 (16.20)
1964	4,870 (8.0)	2,723 (4.5)	1,137 (1.9)	710 (1.2)	320 (0.50)	294 (0.50)	10,054 (16.5)
1965	5,680 (9.8)	1,347 (2.3)	900 (1.6)	437 (.80)	320 (.60)	199 (.30)	8,883 (15.4)
1966	5,100 (9.6)	3,923 (7.3)	1,435 (2.7)	168 (0.3)	171 (0.3)	244 (0.5)	11,041 (20.7)
1967	1,099 (2.4)	284 (0.6)	1,455 (3.2)	396 (0.9)	171 (0.4)	124 (0.3)	3,529 (7.7)

TABLE A-1 (Continued)

YEAR	DIAMONDS	IRON ORE	CHROMITE	BAUXITE	TOTAL MINERAL EXPORTS	TOTAL OTHERS	TOTAL ALL DOMESTIC EXPORTS
1954	3,400 (15.5)	5,414 (24.7)	330 (1.5)	-	9,144 (41.7)	403 (1.8)	21,949 (100.0)
1955	2,800 (14.1)	7,418 (37.4)	385 (1.9)	-	10,603 (53.4)	233 (1.2)	19,854 (100.0)
1956	6,914 (24,5)	8,006 (33.0)	390 (1.6)	-	15,310 (63.2)	251 (1.0)	24,255 (100.0)
1957	12,850 (42.7)	8,760 (29.2)	340 (1.10)	-	21,950 (73.10)	95 (0.30)	30,015 (100.0)
1958	14,368 (43.4)	8,980 (27.2)	230 (0.7)	-	23,578 (71.3)	190 (0.6)	33,082 (100.0)
1959	13,618 (41.5)	8,192 (25.0)	100 (0.3)	-	21,910 (66.8)	261 (0.8)	32,799 (100.0)
1960	32,964 (63.6)	8,270 (15.9)	294 (0.6)	-	41,528 (80.1)	808 (1.6)	51,854 (100.0)
1961	31,938 (63.5)	9,345 (15.9)	180 (0.6)	-	41,463 (80.1)	536 (1.6)	50,324 (100.0)
1962	14,218 (42.7)	10,234 (30.7)	188 (.60)	-	24,640 (74.0)	692 (2.1)	33,299 (100.0)

TABLE A-1 (Continued)

YEAR	DIAMONDS	IRON ORE	CHROMITE	BAUXITE	TOTAL MINERAL EXPORTS	TOTAL OTHERS	TOTAL ALL DOMESTIC EXPORTS
1963	32,327	9,873	184	64	42,448	180	50,890
	(63.50)	(19.4)	(0.4)	(0.1)	(83.4)	(0.4)	(100.0)
1964	39,823	10,455	-	423	50,701	129	60,884
	(65.4)	(17.2)		(0.7)	(83.3)	(0.2)	(100.0)
1965	36,958	10,897	-	578	48,433	222	57,538
	(64.23)	(18.9)		(1.0)	(84.2)	(0.4)	(100.0)
1966	31,293	9,625	-	775	41,693	655	53,387
	(58.6)	(18.0)		(1.5)	(78.1)	(1.2)	(100.0)
1967	29,558	9,076	-	930	39,564	2,510	45,603
	(64.8)	(19.9)		(2.0)	(86.8)	(5.5)	(100.0)

Figures in parentheses represent the percentages of item to total domestic exports.

Source: Annual Reports of the Sierra Leone Department of Agriculture 1954-68; R.G. Saylor, Op. Cit., p. 40 and 80; Bank of Sierra Leone, Economic Reviews, 1964-69; and O.P. Bagai, Op. Cit.

TABLE A-2

VOLUME AND PERCENTAGES OF PRINCIPAL AGRICULTURAL

DOMESTIC EXPORTS, 1954 - 1968

YEAR (ton)	PALM KERNELS	COFFEE	COCOA	PIASSAVA	GINGER	KOLA NUTS	TOTAL
1954	68,080	2,393	1,738	5,693	1,143	1,379	80,426
	(84.6)	(2.9)	(2.1)	(7.0)	(1.4)	(1.7)	(100.0)
1955	57,640	2,092	2,177	4,344	1,733	1,127	69,113
	(83.4)	(3.0)	(3.1)	(6.3)	(2.5)	(1.6)	(100.0)
1956	57,645	3,009	2,881	5,244	1,117	828	70,724
	(81.5)	(4.3)	(4.1)	(7.4)	(1.6)	(1.2)	(100.0)
1957	52,967	3,758	2,011	4,349	700	736	64,521
	(82.1)	(5.8)	(3.1)	(6.7)	(1.1)	(1.2)	(100.0)
1958	54,609	3,348	2,828	4,944	789	1,035	67,553
	(80.8)	(5.0)	(4.2)	(7.3)	(1.2)	(1.5)	(100.0)
1959	57,530	4,931	2,617	5,424	1,054	742	72,298
	(79.6)	(6.8)	(3.6)	(7.5)	(1.5)	(1.0)	(100.0)
1960	54,525	5,094	3,250	5,804	552	1,371	70,596
	(77.2)	(7.2)	(4.6)	(8.2)	(0.8)	(1.9)	(100.0)
1961	57,764	5,024	2,792	5,732	592	960	72,864
	(79.3)	(6.9)	(3.8)	(7.9)	(0.8)	(1.3)	(100.0)
1962	60,986	2,382	4,705	5,191	505	851	74,620
	(81.7)	(3.2)	(6.3)	(7.0)	(0.7)	(1.1)	(100.0)
1963	52,787	3,895	3,253	5,578	586	556	66,655
	(79.2)	(5.8)	(4.9)	(8.4)	(0.9)	(0.8)	(100.0)
1964	42,000	6,420	3,220	7.035	280	984	59,939
	(70.1)	(10.7)	(5.4)	(11.7)	(0.5)	(1.6)	(100.0)

TABLE A-2

(Continued)

YEAR (tons)	PALM KERNELS	COFFEE	COCOA	PIASSAVA	GINGER	KOLA NUTS	TOTAL
1965	46,490	3,550	2,390	770	500	669	54,369
	(85.5)	(6.2)	(4.4)	(1.4)	(0.9)	(1.2)	(100.0)
1966	50,320	9,630	3,330	1,510	1,140	895	66,825
	(75.3)	(14.4)	(5.0)	(2.3)	(1.7)	(1.3)	(100.0)
1967	33,700	2,830	3,510	600	1,600	600	42,840
	(78.7)	(6.6)	(8.2)	(1.4)	(3.7)	(1.4)	(100.0)
1968	52,760	4,140	3,400	2,500	1,391	n.a.	64,191
	(82.2)	(6.4)	(5.3)	(3.9)	(2.2)		(100.0)

Source: Annual Reports of Sierra Leone Department of Agriculture and Produce Marketing Board, 1954-1968;
R.G. Saylor, The Economic System of Sierra Leone; Bank of Sierra Leone, Economic Reviews, 1964-69; and
O.P. Bagai, A Statistical Study of Exports of Sierra Leone, 1920-64; Sierra Leone, Trade Reports, 1946 to 1968.

TABLE A-3

VALUES AND PERCENTAGES OF PRINCIPAL DOMESTIC AGRICULTURAL EXPORTS,

1954 - 1967: VALUES IN THOUSAND OF LEONES

YEAR	PALM KERNELS	COFFEE	COCOA	PIASSAVA	GINGER	KOLA NUTS	TOTAL
1954	7,528	1,726	1,605	668	324	551	12,402
	(60.7)	(13.9)	(12.9)	(5.4)	(2.6)	(4.4)	(100.0)
1955	5,019	948	1,482	430	715	424	9,018
	(55.7)	(10.5)	(16.4)	(4.8)	(7.9)	(4.7)	(100.0)
1956	5,016	1,322	1,163	496	483	214	8,694
	(57.7)	(15.2)	(13.4)	(5.7)	(5.6)	(2.5)	(100.0)
1957	4,507	1,792	772	496	200	206	7,970
	(56.5)	(22.5)	(9.7)	(6.2)	(2.5)	(2.6)	(100.0)
1958	4,897	1,790	1,745	475	140	270	9,314
	(52.6)	(19.2)	(18.7)	(5.1)	(1.5)	(2.9)	(100.0)
1959	6,351	1,970	1,403	475	205	223	10,628
	(59.8)	(18.5)	(13.2)	(4.5)	(1.9)	(2.1)	(100.0)
1960	5,833	1,299	1,392	546	146	300	9,518
	(61.3)	(13.6)	(14.6)	(5.7)	(1.5)	(3.2)	(100.0)
1961	4,875	1,192	928	580	161	198	8,325
	(58.6)	(14.3)	(11.3)	(7.0)	(1.9)	(2.4)	(100.0)
1962	4,905	618	1,501	490	291	162	7,967
	(61.6)	(7.6)	(18.8)	(6.2)	(3.7)	(2.0)	(100.0)
1963	4,907	1,305	1,173	541	178	158	8,262
	(59.4)	(15.8)	(14.2)	(6.5)	(2.2)	(1.9)	(100.0)
1964	4,870	2,723	1,137	710	320	294	10,054
	(48.4)	(27.1)	(11.3)	(7.1)	(3.2)	(2.9)	(100.0)
1965	5,681	1,347	902	436	320	199	8,883
	(64.0	(15.2)	(10.2)	(4.9)	(3.6)	(2.2)	(100.0)

TABLE A-3

(Continued)

YEAR	PALM KERNELS	COFFEE	COCOA	PIASSAVA	GINGER	KOLA NUTS	TOTAL
1966	5,100	3,923	1,435	168	171	244	11,041
	(46.2)	(35.5)	(13.0)	(1.5)	(1.5)	(2.2)	(100.0)
1967	1,099	284	1,455	396	171	124	3,529
	(31.1)	(8.0)	(14.2)	(11.2)	(4.8)	(3.5)	(100.0)

Source: Annual Reports of Sierra Leone Department of Agriculture and Produce Marketing Board, 1954-68;
R.G. Saylor, The Economic System of Sierra Leone;
Bank of Sierra Leone, Economic Reviews, 1964-69; and
O.P. Bagai, A Statistical Study of Exports of Sierra Leone, 1920-64; Sierra Leone, Trade Reports, 1946 to 1968.

TABLE A-4

TOTAL MAIN AGRICULTURAL EXPORTS:

TONNAGE, VALUE, VALUE PER TON AND INDEX, 1954-67.

PERIOD	TONNAGE	Value (000 Leones)	Export Value Per Ton (Le/Ton)	Unit Value Index (1960=100)
1954	80,426	12,402	15.42	114
1955	69,113	9,018	13.04	97
1956	70,724	8,694	12.29	91
1957	64,521	7.970	12.35	92
1958	67,553	9,314	13.78	102
1959	72,298	10,628	14.70	109
1960	70,596	9,518	13.48	100
1961	72,864	8,325	11.42	85
1962	74,620	7,967	10.67	79
1963	66,655	8,262	12.39	92
1964	59,939	10,054	16.77	124
1965	54,369	8,883	16.33	121
1966	66,825	11.041	16.52	123
1967	42,840	3,529	8.23	61

Source: Summarized from Tables A-2 and A-3.

TABLE B-1

PALM KERNEL EXPORTS: VOLUME, VALUE AND VALUE PER TON

1946 to 1968

YEAR	EXPORT VOLUME (Tons)	EXPORT VALUE[a] PER TON (Leones/Ton)	EXPORT VALUE (000 Leones)
1946	46,773	29.45	94
1947	61,241	42.51	122
1948	66,431	52.52	133
1949	76,541	60.47	153
1950	71,269	63.92	143
1951	75,102	121.16	4,556
1952	76,375	135.90	9,352
1953	68,904	123.64	8,519
1954	68,080	110.57	7,528
1955	57,640	87.08	5.019
1956	57,650	87.01	5,016
1957	52,970	85.09	4,507
1958	54,610	89.66	4,897
1959	57,530	110.40	6.351
1960	54,530	106.99	5,833
1961	57,760	84.40	4,875
1962	60,970	80.43	4,905
1963	52,760	92.95	4,907
1964	42,000	93.38	4,870
1965	46,460	115.93	5,681
1966	50,320	94.00	5,100
1967	33,700	95.00	1,099
1968	52,760	133.72	8,593

[a]These are average wholesale prices, F.O.B., Freetown.

Source: Sierra Leone, Annual Reports of Department of Agriculture, 1946-68; SLPMB, Annual Reports, 1949-64; Bank of Sierra Leone, Economic Reviews, 1964-70.

TABLE B-2

COCOA EXPORTS: VOLUME, VALUE AND VALUE PER TON

1946 to 1968

YEAR	EXPORT VOLUME (Tons)	EXPORT VALUE[a] PER TON (Leones/Ton)	EXPORT VALUE (000 Leones)
1946	572	40	22
1947	439	76	34
1948	1,379	150	206
1949	714	184	131
1950	1,620	144	234
1951	1,811	580	1,052
1952	2,061	618	1,227
1953	1,631	540	908
1954	1,738	765	1,605
1955	2,177	680	1,481
1956	2,881	402	1,163
1957	2,011	384	772
1958	2,828	618	1,744
1959	2,617	536	1,404
1960	3,250	428	1,392
1961	2,792	332	928
1962	4,705	319	1,502
1963	3,253	362	1,174
1964	3,220	379	1,137
1965	2,390	307	900
1966	3,330	322	1,435
1967	3,510	382	1,428
1968	3,400	468	1,853

[a]These are average wholesale prices F.O.B., Freetown.

Source: Sierra Leone, Annual Reports of Department of Agriculture, 1946-68; SLPMB, Annual Reports, 1949-64; Bank of Sierra Leone, Economic Review, 1964-70; and O.P. Bagai, A Statistical Study of Exports of Sierra Leone, 1920-64.

TABLE B-3

COFFEE EXPORTS: VOLUME, VALUE AND VALUE PER TON

1946 to 1968

YEAR	EXPORT VOLUME (Tons)	EXPORT VALUE[a] PER TON (Leones/Ton	EXPORT VALUE (000 Leones)
1946	132	110	15
1947	276	110	30
1948	347	110	38
1949	257	134	34
1950	317	246	78
1951	1	432	.4
1952	1	434	.4
1953	1,050	634	666
1954	2,393	746	1,725
1955	2,092	452	948
1956	3,009	438	1,332
1957	3,758	476	1,792
1958	3,348	534	1,790
1959	4,931	398	1,970
1960	5,094	254	1,300
1961	5,024	237	1,192
1962	2,382	259	618
1963	3,895	335	1,305
1964	6,420	459	2,723
1965	3,550	352	1,347
1966	9,630	416	3,923
1967	2,830	472	284
1968	3,400	496	555

[a]These are average wholesale prices F.O.B., Freetown.

Source: Sierra Leone, Annual Reports of Department of Agriculture, 1946-68; SLPMB, Annual Reports, 1949-64; Bank of Sierra Leone, Economic Reviews, 1964-70; and O.P. Bagai, A Statistical Study of Exports of Sierra Leone, 1920-64.

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