

Government Policy and Export Production in
the Nigerian Oil Palm Industry, 1906 - 1965

by

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Abstract

Essential to the study of economic development in developing countries is the influence of government policy on the export production of primary products. This policy affects such growth determinants as capital accumulation, foreign exchange earnings, and resource use. Palm Products are one of the major exports upon which Nigeria depends for development funds. Government policies affecting this rural industry have achieved only a limited success in inducing export output increases.

The thesis attempts to examine and explain export output trends against the background of these policies and other factors such as demand and production organisation. The objective is to suggest, from the analysis that emerges, a future policy capable of inducing greater increases in export output, earnings and improvement in producers' income, taking into account world production, external demand and recent development in other sectors. The main finding is that the introduction of policy measures able to improve production organisation within the rural producing sector as opposed to the present plantation organisation has a greater prospect of stimulating production at less cost.

The study extends over 63 years divided into three periods of historical significance - 1906/38; 1939/54 and 1955/65. The first period commences when Southern Nigeria was created. The second covers the war and post-war years, while the third extends from the introduction of self-government until the 1966 military coup.

The study is analytical. Materials used include available colonial documents, annual reports and other sources supplemented by estimates. The central theme is contained in Chapters 2 to 7. Chapter 2 examines the demand factors influencing early production. This is followed in Chapters 3, 4 and 5 by a discussion of early policy measures affecting production and producers' responses to economic incentives. Chapter 6 discusses post-war policies and export production while Chapter 7 examines production in the context of economic planning. Some general conclusions and recommendations are presented in Chapter 8.

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CONTENTS

	<u>Page</u>
Abstract	2-3
Acknowledgements	4
List of Tables	6-12
Chapter 1. The Nigerian Oil Palm Industry: Its Nature and Significance.	13-33
Chapter 2. British Policy and the Import of Nigerian Palm Products 1906-1938.	34-55
Chapter 3. Internal Policy and the Export Production of Palm Products 1906-1938.	56-91
Chapter 4. Responses to Economic Incentives in Production and Trade in Palm Products 1906-1938.	92-121
Chapter 5. Influence of Market Forces on the Shape of Palm Products Export Supply Curve 1906-38.	122-147
Chapter 6. Post-war Policy and Export Production 1939-1954.	148-198
Chapter 7. Economic Planning and Export Production in the Oil Palm Industry 1955-1965.	199-245
Chapter 8. Government Policy and Export Production in the Nigerian Oil Palm Industry 1906-1965. Summary and Conclusion.	246-271
Appendix 1.1	272-277
Appendix 2.1	278-279
Appendix 6.1	280-281
Tables	282-333
Bibliography	334-344

List of Tables

	Page
1.1 Export value of palm products as proportion of total domestic exports, 1906-1938	282
1.2 Export value of palm products as proportion of total domestic exports, 1939-1954.	283
1.3 Export value of palm products as proportion of total domestic exports, 1955-1965.	284
1.4 Export value of palm products, cocoa and groundnuts, 1906-1965.	16
1.5 Contribution of palm products to total Nigerian export duty, 1917-1938.	285
1.6 Contribution of palm products to total export duty, 1939-54.	286
1.7 Contribution of palm products to total export duty, 1955-65.	287
1.8 Palm products sales tax as percentage of E. Nigerian internal revenue, 1955/56-1962/63.	288
2.1 World vegetable oil and oilseeds production index and their proportion in relation to total world production, 1909-1937.	289
2.2 United Kingdom imports of oilseeds and nuts, 1909-1936.	290
2.3 U.K. imports of oilseeds and nuts (equivalent oil yields), 1909-1936.	291
2.4 U.K. Import index of oilseeds and nuts (equivalent oil yields), 1909-1936.	292

	Page
2.5 Oils, fats and resin used in the manufacture of soap in the United Kingdom, 1927-1938.	293
2.6 Vegetable oilseeds and fats used in the manufacture of margarine in the United Kingdom, 1927-1936.	294
2.7 Production of soap in the United Kingdom for selected years, 1909/1913; 1924/28; 1929-1938.	295
2.8 U.K. (c.i.f.) prices and price index for palm products, copra and groundnuts, 1911-1938.	296
2.9 Export of palm kernels from the principal exporting countries 1924-1938 (thousand tons).	297
2.10 The United Kingdom (c.i.f.) prices, the f.o.b. prices and the index of prices for Nigerian palm products, 1911-1938.	298/300
2.11 U.K. imports of Nigerian palm oil and palm kernels, 1925-1937.	301
2.12 Quantity of palm products exported from Nigeria, 1906-1938.	302/303
2.13 Distribution of British West African Palm Products to major importing countries 1913.	304
2.14 Distribution of Nigerian palm oil export to major importing countries, 1919-1928.	305/306
2.15 Distribution of Nigerian palm kernel export to major importing countries, 1919-1938.	307/308
2.16 Exports of palm kernel oil produced in the United Kingdom, 1924-1931.	309

	Page
2.17 Export value of Nigerian palm products, 1906-1938.	310
3.1 Estimated palm oil output by hand-presses, 1932-1938.	79
3.2 Cultivated oil palm acreage and number of cultivators, 1928-1938.	82
3.3 Estimated palm oil output from smallholders' plantations, 1932/38.	83
3.4 Export of palm oil from principal exporting countries, 1924-1938.	311
4.1 The quantity of palm oil exported, the estimated exchange rate, and the U.A.C. (f.o.b.) prices of palm oil in manillas, 1931-1938.	98
4.2 Indices of export tonnage, f.o.b. prices, import prices, and the terms of trade for palm oil, 1930-1938.	103
4.3 Indices of export tonnage, f.o.b. prices, import prices, and the terms of trade of palm kernels, 1930-1938.	104
6.1 Tonnage of palm oil and palm kernels purchased for exports 1939-1954.	312
6.2 The Nigeria Oil Palm Produce Marketing Board buying agents, 1949-1954.	158
6.3 Estimated minimum tonnage of palm products purchased by Nigerian buying agents, 1949-1954.	158
6.4 Palm oil and palm kernels producer prices, 1939-1954.	313

	Page	
6.5	Producer prices and index of producer prices for palm products, 1949-1954.	314
6.6	Number of Marketing Board inspection stations and the grades of palm oil inspected, 1948/49-1953/54.	164
6.7	Grades of palm oil exported by the Marketing Board, 1950-1954.	165
6.8	Percentage changes in the grades of oil produced for export, 1949-1954.	315
6.9	Nigeria Oil Palm Produce Marketing Board's surpluses, development and research allocation, 1949-1954.	315
6.10	Expenditure by Eastern Nigerian Production Board on direct agricultural projects, 1950-1954.	316
6.11	Number of Production Boards' Mills in operation 1949-1954.	317
6.12	Palm oil output, quality and percentage of oil recovered per ton of fruit by oil mills, 1950-1954.	176
6.13	Tonnage of oil mills processed palm oil purchased by the Marketing Board, 1949-1954.	317
6.14	Pre and post-war comparative allocation of man-hours in the processing of a ton of fruit, 1906/38 and 1949/54.	181
6.15	Palm oil producer money income and index of producer money income, 1949-1954.	185

	Page
6.16 Palm trees acreage planted by the Production Boards, 1949-1954.	318
6.17 Area and percentage of land devoted to various usages, 1950/51.	319
7.1 Regional distribution of palm oil export production (percentage), 1955-1963.	320
7.2 Quantity and value of principal crops exported from Eastern Nigeria, 1955-1964.	321
7.3 Non-plantation production of export palm oil and palm kernels (E. Nigeria), 1955/56-1964/65.	322
7.4 Expenditure by E.N.D.C. on agricultural projects, 1955/61; 1962/64, at 1957 prices.	323
7.5 Ministry of Agriculture expenditure on agriculture in 1962-64 at 1957 prices.	207
7.6 Loans and advances made to palm products licensed buying agents, 1955-1963.	209
7.7 Proportional allocation of expenditure (at 1957 prices) between cultivation and processing, 1950/54 and 1955/64.	211
7.8 Allocation of expenditure between planta- tion and local producers in 1955/61 and 1962/64.	212
7.9 Palm oil output from E.N.D.C. plantation palm fruit as percentage of total marketing Board purchases, 1955/56 - 1964/65.	324

	Page
7.10 Proportion of the grades of palm oil purchased by the E. Nigeria Marketing Board, 1955-1962.	324
7.11 Palm Products producer prices and index of producer prices, E. Nigeria, 1955-65.	325
7.12 European ports (c.i.f.) prices of Nigerian palm products, 1955-1965.	326
7.13 Palm oil producer money income and index of producer money income, 1955-65.	217
7.14 Acreage of oil palm trees rehabilitated and index of average producer prices, 1955-1965.	218
7.15 Internal prices of palm oil in selected Nigerian towns, 1959/62.	220
7.16 Quantity of palm oil railed from Eastern to Northern Nigeria, 1957-1965.	221
7.17 Unskilled labour employed by the E.N.D.C., 1956/57 and 1962/63.	226
7.18 Regional distribution of manufacturing establishments, 1960-1964.	327
7.19 Regional distribution of all manufacturing plants in Nigeria as at the end of 1965.	327
7.20 Persons engaged in the E. Nigerian Industries as at March 1962.	328
7.21 Expenditure on fixed and working capital in E.N.D.C. plantations and oil mills, 1955-1964 at 1957 prices.	329
7.22 World production and prices of vegetable oils and fats, average 1963/65 compared with 1955/56.	330

	Page
7.23 Nigerian export production of palm oil and palm kernels as a percentage of world production, 1954/55-1965.	331
7.24 Overseas and local sales of palm products by the Nigerian Marketing Boards, 1959-1965.	332
7.25 Capital-output ratios, capital requirement per worker, and net value added per worker in selected large and small scale industries in India, 1956.	333

Chapter 1

The Nigerian Oil Palm Industry

Its Nature and Significance

I

Few wild trees are of as much economic and social value to Nigerian farmers and to the country as the oil palm tree. In referring to the value of the products of the palm tree to farmers, Buchanan and Pugh emphasised the difficulty of exaggerating

"the importance of the oil palm in the forest lands of the South: its leaf-ribs are used in building, the leaves in thatching, the fibre in rope making ... palm-wine obtained by tapping the tree is a pleasant, intoxicating drink, the palm-oil is a valuable source of vitamins in the indigenous diets."¹

Moreover, the dead palm is a valuable source of timber for use as pillars and beams, local fuel for cooking, and a breeding platform for such edible fungi as the mushroom. However, it is with the export products of the palm tree - palm oil and palm kernels - that the present study is concerned. Internal consumption of palm oil, estimated at about "80 to 150 per cent of exports"² is excluded from the study since such important data as output figures for local domestic use are not available.

¹ K.M. Buchanan & J.C. Pugh, Land and People in Nigeria, London 1955, p. 132.

² Peter Kilby, "The Nigerian Palm Oil Industry" in Food Research Institute Studies, Vol. VII, No. 2, 1967, p. 177.

The importance of the palm tree to the farmer due to its various local usages, as well as to the income he obtains from export production and local sales of palm products, means that the tree is very important for the social and economic life of the farmers. Its social significance arises not only from the palm wine drunk at social gatherings but also from local customs which govern the various usages of the tree's products. For instance, local customs relating to communal exploitation of the trees, such as those on the mortgaging or sale of wild palm groves as well as the harvesting of fruits, are reflections of the social significance of the tree to farmers.¹ In 1948, the United Africa Company (the most important British palm products export company), in emphasising the dependence of Eastern Nigerian farmers on the palm products trade, remarked that

"It is no exaggeration to say that any cessation of the trade in palm products, or even any considerable diminution, would lead to such a collapse of the local economy as to result in three or four million people being reduced to famine conditions."²

The traditional association of the farmers with palm production and their preference for exporting palm

¹ Cf. F.E. Buckley "The Native Oil Palm Industry and Oil Palm Extension Work in Owerri and Calabar Provinces", Paper read at the Third West African Agricultural Conference held in Lagos, June 1938, p. 208.

² United Africa Co. Ltd. in West Africa, June 1948, p. 611.

products as opposed to other export crops, as will be seen in later chapters, shows that the United Africa Company's remarks are still valid.

The significance of palm oil and palm kernel export production to the Nigerian economy arises from two factors. Firstly, the contribution of the industry to export earnings; and secondly, the fact that export production of palm products is a major source of income to a substantial proportion of the rural agricultural population in Southern Nigeria.¹ In absolute terms the export value of palm products rose irregularly from £2.2m in 1906 to £40.1m in 1965.² The value of palm products as a percentage of total domestic exports averaged 82.1% between 1906 and 1913; between the beginning of the first and the beginning of the second world wars, i.e. 1914/1938, it averaged 50.6%. From 1939 the percentage contribution of palm products relative to the value of total exports was still high despite the increase in the number and value of other primary products exported as well as the value of mineral oil since its first export in 1956. In the periods 1939/54 and 1955/65, palm products' share of

¹ In Eastern Nigeria alone the 1962/63 census showed that 70% of the 5,244,000 farmers, i.e. 3,670,800, were engaged in palm production for export. See E. Nigeria Census Office Report, Enugu, 1964, p. 2.

² Figures calculated from Tables 1.1, 1.2, and 1.3. The export value of palm products represented 17.8% of the total value of domestic export for 1965.

the value of total domestic exports averaged 34.1% and 22.0% respectively (see Tables 1.2 and 1.3).

The value of export earnings from the industry as compared with the other two major Nigerian export crops - cocoa and groundnuts - for the three periods, 1906/38, 1939/54, and 1955/65, is shown in Table 1.4. Total export earnings from palm products, cocoa and groundnuts

Table 1.4

Export Value of
Palm Products, Cocoa and Groundnuts, 1906-1965

Period	Palm Products		Cocoa		Groundnuts	
	Export Value	Yearly Av.	Export Value	Yearly Av.	Export Value	Yearly Av.
	£m (1)	£m (2)	£m (3)	£m (4)	£m (5)	£m (6)
1906-1938	175.3	5.3	32.9	1.0	37.4	1.1
1939-1954	256.1	16.0	201.4	12.6	154.8	9.7
1955-1965	373.3	33.9	360.2	32.7	321.9	29.3

Sources: Column (1) Calculated from Tables 1.1, 1.2, 1.3.

Columns (3) and (5) Calculated from

- (i) G.K. Helleiner, Peasant Agriculture, Government and Economic Growth in Nigeria, Table IV-A-7, pp. 501-3;
- (ii) Central Bank of Nigeria, Economic and Financial Review, Vol. 4, No. 1, June 1966, Table 27, p. 66.

Columns (2), (4), (6): Yearly average calculated.

were £804.7m, £594.5m, and £514.1m respectively. Its significance to the economy as compared with the other major export crops is particularly underlined in the period 1906/38 when the average yearly value of export earnings from palm products was £5.3m as compared with £1.0m and £1.1m for cocoa and groundnuts respectively.

In addition to its export value, the oil palm industry has contributed significantly to export duty revenue both in absolute terms and proportionately. For example, after export duty on primary products was first introduced in 1916, the total annual revenue from export duty in 1917 and 1918 amounted to £339,639 and £490,917 respectively. Palm products contributed 91.4% and 82.4% in 1917 and 1918 respectively. By 1952 export duty on palm products totalled £4,054,969 which represented 46.3% of total export duty. And in 1965 export duty on palm products was £3,073,000, i.e. 21.3% of total export duty (see Tables 1.5, 1.6, and 1.7). Apart from the export duty on palm products, other levies such as the purchase sales tax further contributed to the revenue of the major producing regions. In 1955/65 for instance, palm products sales tax in E. Nigeria amounted to £1,050,000 which represented 44.9% of the region's internal revenue (see Table 1.8).

The industry is also important to the Nigerian economy as a major source of income to a high proportion

of the agricultural population in Southern Nigeria - particularly in South Eastern Nigeria. Two major primary products constitute the core of export production, and therefore of income to the rural farmers of Southern Nigeria - cocoa and palm products. Of these two products, cocoa is mainly produced in Western Nigeria, while the palm kernel is produced in both Eastern and Western Nigeria.¹ In addition, palm oil export production remains the sole major export apart from mineral oil of the former Eastern Nigeria. An estimated minimum of 70% of the 5,244,000 agricultural workers out of an adult working population of 6,596,000 in E. Nigeria in 1963 were involved in the processing of palm products for export.² Since 1955 the Eastern Nigerian government's objective of raising the standard of living of the rural agri-

¹ The major reason for this difference may be traced to the following factors:

- (a) The greater concentration of palm groves in Eastern Nigeria.
- (b) The difference in soil fertility between Eastern and Western Nigeria. This difference contributes to the successful introduction of alternative export crops in the West.
- (c) The greater association of the palm culture with traditional social and economic activities in the East.
- (d) The higher producer price differential between cocoa and palm products which makes cocoa export production more attractive to Western Nigerian farmers.

² See Eastern Nigeria, Census Office Report, Enugu 1964, pp. 2 and 4.

cultural population was pursued by introducing measures to improve the income of palm products producers. These measures included direct involvement in product pricing policy and marketing organisation to ensure that the producer would be "safeguarded against a slump in prices"¹, and "that the farmer has an accessible and profitable market for all his produce."² These factors, namely, producer price policy and marketing re-organisation were, as will be seen in Chapters 6 and 7, important influences on producers' income and incentives to export production.

Early export trade in Nigerian palm products originated as a result of demand in Britain for vegetable oil seeds associated with requirements for industrial raw materials during the Industrial Revolution. Palm products were increasingly used as inputs in the manufacture of such products as soap, margarine, cooking fats, candles and lubricating greases.³ British imports of palm

¹ Nigeria, Annual Report of the Commerce and Industries Department 1946/47, Sessional Paper No. 31 of 1947, Lagos 1947, p. 4.

² Eastern Region of Nigeria, Sessional Paper No. 4 of 1954, Enugu 1954, p. 5.

³ For a detailed account of the origin of the palm products trade in Nigeria see K.O. Dike, Trade and Politics in the Niger Delta 1830-1885, Oxford 1957; J.C. Anene, Southern Nigeria in Transition 1886-1906, Cambridge 1966; A. McPhee, Economic Revolution in British West Africa, Aberdeen 1926.

products was a major factor in "British West Africa being dragged into the vortex of modern international economic mechanism, and ... a co-operator in the economic commonwealth of the world."¹

The essential pre-requisite which permitted local export production was the availability of natural resources² associated with production. These resources were land, labour, and the geographical advantage of the coastal region in the form of a

¹ Ibid., p. 1.

² Resources are referred to as natural where no additional expenditure in the form of capital was used in the improvement of resources such as land and labour, and the geographical endowment, e.g. river transport facilities.

The term "availability of natural resources", as used here, differs in its implication from that which is associated with the comparative cost theory which emphasises the economic benefits from territorial division of labour originating from favourable factor endowment and geographical advantage. The role of geographical advantage in natural resources in the comparative cost theory implies a certain degree of specialization which promotes the re-allocation of resources more effectively between domestic and export production in line with relative prices. On the other hand, availability of resources as used here implies the existence of a latent surplus productive capacity in the industry above domestic requirements. Trade in palm products did not as much promote the re-allocation of these resources as provide a new effective demand for the output of the surplus resources, which would otherwise have not been used. For an elaboration of the analysis of comparative cost theory as related to natural endowment and its lack of relevance to the development of trade in primary products see J.H. Williams, "The Theory of International Trade Reconsidered" in The Economic Journal, June 1929, pp. 195-209; H. Myint "The Classical Theory of International Trade and the Underdeveloped Countries" in The Economic Journal, No. 270, vol. LXVIII, June 1958, pp. 317-337.

network of rivers which provided an essential transport medium for the shipment of export products. The total land area of the palm belt in Southern Nigeria as estimated in 1911 was 79,880 square miles.¹ This area, which forms a geographical strip from Lagos in the West to the Cameroons in the East, lies within the rain forest belt in Nigeria. Within this zone, the dense stands of oil palm provided a distinctive vegetative land-mark. The exploitation of the resources by local farmers was not only the consequence of the existence of wild palm trees but also arose from the constraint imposed by poor soil unsuitable for the development of alternative cash crops.² The geological disadvantage with respect to soil thus restricted the deployment of local agricultural labour mainly to production of palm products both as a traditional vocation and a means of earning income through exports.

¹ Blue Book, Colony & Protectorate of Southern Nigeria, 1911, Section R1-5, Lagos 1912.

² The region has been described as "an outstanding example of a region of difficulty, an area of tangled rain-sodden vegetation, and of intensely leached, sandy soils whose acidity renders them useless for all save a limited range of crops." See K. Buchanan "Recent Developments in Nigerian Peasant Farming" in The Malayan Journal of Tropical Geography, vol. 2, March 1954, p. 17.

Export production was initially concentrated within the coastal belt and along coastal rivers where the network of southward flowing rivers provided the only transport facilities for the evacuation of the products to the sea for shipment. Given the primitive system of exploitation, in which capital investment was not essential, and the demand for the product, the expansion of the industry depended mostly upon increasing the area and labour force devoted to the industry.

II

In the period 1906/38 export production and trade in palm products was undertaken entirely by local producers who adopted simple techniques of production based on the social and economic organisation peculiar to the different producing areas. Thus, for example, while the social division of labour influenced the degree of participation of both sexes in production, the existence of local currencies and producers' indebtedness to traders were major influences on the tonnage of palm products exported. The traditional setting of production and trade in palm products, especially in the period 1906/38, thus requires some background elaboration.

"Production" in economics refers to the type of activity which changes the form of the materials with which it works into goods or services capable of

satisfying human needs either directly or indirectly. In agriculture, the activity would include cultivation, nurturing, harvesting, and for some products, processing. Output of the final products is a function of land, labour and capital. In the forest culture of the oil palm belt, the activity which leads to final processing is little more than the gathering of wild forest products, and thus excludes cultivation and nurturing. The absence of cultivation and nurturing as well as the abundant dispersal of the palm trees in natural wild groves communally owned and exploited¹ also eliminates capital as a factor of production and prevents a reliable estimate being made of output per land unit. Output in local production is thus not considered per unit of land, e.g. per acre, but only per unit of time. Also output per unit of time is considered mainly as a function of land and labour.

¹ J.H. Farquhar, the Conservator of Forests, Southern Nigeria, described the palm groves as being covered with palm trees "in large quantities, in which whole groves and forests are found which, from a short distance and ignoring the crown, resemble palisading." The Oil Palm and its Varieties, Crown Agents, London 1913, p. 12.

For a detailed description of the communal ownership and exploitation of the groves see L. Dudley Stamp, "Land Utilization in Nigeria" in The Geographical Review, vol. xxviii, no. 1, Jan. 1938; C.D. Forde & C. Daryll, "Land and Labour in a Cross River Village" in The Geographical Journal, vol. XC, no. 1, July 1937; C.K. Neek, Land Tenure and Land Administration in Nigeria and the Cameroons (Colonial Research Studies, No. 22) London H.M.S.O. 1957; T.O. Elias, Nigerian Land Law and Custom, London, 1953; L.T. Chubb, Ibo Land Tenure, Ibadan, 1961; H.L. Ward-Price, Land Tenure in the Yoruba Provinces, Lagos 1939.

Outputs of the final products - palm oil and palm kernels - are joint products derived from the same fruit - palm fruit. These fruits grow in bunches of several hundreds on a tree which often grows to a height of about sixty feet.¹ The individual fruit is about an inch and a half in length and is composed of an outer skin, the oil bearing layer (the mesocarp) which covers the palm nut that contains the palm kernel. Extraction of the oil and kernels involves crude processing which in the case of oil extraction implies boiling or fermenting the fruit, depulping by pounding or mashing with the feet in a container, and squeezing the depulped fibre by hand to obtain the oil. The palm nuts obtained during the process are dried - usually for a month - and later cracked between stones to extract the palm kernels.

An important factor in the crude processing system involved in the output of the two products is the time factor. While, for instance, palm oil has to be processed within a specified period (i.e. before the fruits are over-ripe for processing), the palm kernel is extracted at a more leisurely pace because the drying process preserves the nuts over a long period and

¹ Palm trees reach their "full height of sixty feet in about one hundred and twenty years" and begin to bear from the "fourth to the eighth year". See "Investigations in connection with the African Palm Oil Industry" in Bulletin of the Imperial Institute, Vol. VII, No. 4, 1909, p. 360.

because the cracking process is a laborious task which cannot easily be accomplished in a number of days but rather in months.¹ The time factor involved in the processing of both products thus influences the seasonal nature of palm oil production and its comparatively lower export volume as compared with the volume of palm kernels which are produced all the year round. The annual export tonnages of both products are therefore strongly influenced by the differences in the seasonal extraction rates (in the case of palm oil), and all the year round extraction rates (in the case of palm kernels), and by the nature of the labour input in the processing of each product. The harvesting and processing of palm oil involves an entire family's labour. Harvesting which requires a complicated climbing manoeuvre before cutting the fruit bunches, is done by men. Women and children gather the fruits which are jointly processed by men, women and children -

¹ As a result of the longer process involved in extracting the palm kernel, the palm nuts derived during the processing of oil within a harvesting period are as a rule not completely extracted before the next harvesting. The accumulated palm nuts are therefore extracted continuously throughout the years.

each performing a separate process.¹ On the other hand, the extraction of palm kernels is, as a rule, only performed by women and children. In some areas, such as Western Nigeria, with a smaller concentration of wild palm groves as compared with the East, and where an alternative source of export crop - cocoa - is of greater economic importance to male farmers, only women and children are deployed in the gathering of palm nuts (the over-ripe dried fruits which drop from the fruit bunch and are unsuitable for oil processing) for extraction. Their gathering activity thus does not require harvesting - the major male labour activity in palm product processing. Palm kernels gathered in this way and extracted independently without oil processing exhibit the characteristics of a separate product, i.e. the application of a defined type of labour - women and children - to the gathering and extracting of dried palm nuts for export.

Differences in labour application in the processing of

¹ The various processes involved are harvesting, preparing fruit, depulping, extracting and wood and water supply. In the two methods of preparing oil - officially known as the "soft oil" and "hard oil" processes - the distribution of processing activities amongst men, women and children differs. In the soft oil method, men's activities are harvesting and preparing fruit. Women and children perform the other functions. On the other hand, in the "hard oil" process, men perform all the functions except carrying water and wood. Women also assist in preparing fruit and extracting. The only function performed by children in this method is carrying water and wood. For a detailed description of the processing method, see Appendix 1.1.

oil and in the extraction of palm kernels influence the consideration of whether the theory of joint supply can be applied to the actual tonnage of palm oil and palm kernels exported from Nigeria. The problem arises because palm products can only be considered as joint products in the East but not the West.

Other major factors which influenced the tonnage of both products exported were internal consumption and the quality of products accepted for export.¹ For palm kernels, export production was not affected by these two factors, so export output refers to almost all the extracted products of the palm fruit nuts.² On the other hand, palm oil export output only refers to the surplus over and above self-consumption requirements by the producer accepted as suitable for export.³ The latter aspect, namely, the quantity accepted as suitable for export, arises from the non-homogeneous nature of

¹ Palm oil quality did not affect the volume exported before 1928.

² Unlike palm oil, the palm kernel is not consumed locally and is rarely used for any purpose other than export. Secondly, the extreme dryness of the nuts before extraction renders the elimination of any quantity by grading unnecessary.

³ From 1928 the quality of the palm oil exported was restricted to the grades approved by the Inspection Board. See E.M. Watson and A.H. Young "Produce Inspection in Nigeria", paper read at the Third West African Agricultural Conference, Lagos, June, 1938, p. 1.

Nigerian palm oil.¹ The grades of palm oil were determined by their quality and this was in turn classified by the percentage of free fatty acid² in each grade - the higher the percentage of free fatty acid content, the lower the grade. From 1939 price differences per ton of palm oil reflected the grade differential of export palm oil.

Another aspect of importance in the study is concerned with the nature of the price data used in the analysis. The marketing of palm products in the period 1906/48 was not a direct transaction between producers and foreign buyers. Rather, its organisation involved a private arrangement between the producers and a class of local merchants called middlemen who actually sold the products to foreign merchants. The marketing organisation thus involves two sets of prices - the individually negotiated price between the producer

¹ The non-homogeneous nature of Nigerian palm oil is not characteristic of all palm oil. Differences in the quality of palm oil arise from the use of over-ripe fruit in processing and the crude methods of preparing the fruit. Plantation palm oils, for instance, are generally regarded as homogeneous because of the high quality of the oil as compared with hand-processed oil.

² In the period 1906/38 almost all the tonnage of Nigerian palm oil exported contained between 18% and 33% free fatty acid. Plantation palm oil on the other hand contains between 1% and 3% free fatty acid. See F.E. Buckley, "The Native Oil Palm Industry and Oil Palm Extension Work in Owerri and Calabar Provinces" Third West African Agricultural Conference, vol. 1, Lagos 1938, p. 214.

and the middlemen; and the f.o.b. prices.¹ Of these two sets of prices, only one is known, i.e. the f.o.b. prices. Prices paid to producers by middlemen were privately arranged. Their determination involved such social elements as the family link between the producer and the middleman, the social status of the middleman in the producing village, his influence in the allocation of palm groves to producers, and the social and financial indebtedness of the producer to the middleman. The determination of local prices paid by foreign merchants to the middlemen also involved an element of market sharing. Thus for instance the local price paid by the German merchants who were in control of the trade in the Calabar river area was different from that of the British merchants who controlled the Niger delta trade.² On the other hand, where different foreign merchants bought within the same producing area, e.g. the Lagos area, the competitive nature of the trade

¹ The f.o.b. price is only a crude indicator of the prices paid to the middlemen as other handling charges might have been included in the official figures quoted as the f.o.b. price.

² The regional distribution of buying areas by foreign merchants originated from the granting of a Royal Charter by the British Parliament to the Royal Niger Company for trade and administration in the Niger district also known as the "Oil Rivers Protectorate" in 1886. Other European merchants purchased away from the influence of the Royal Niger Company. See C - 9372 Royal Niger Company, London, H.M.S.O. 1899, pp. 9-36. The practice of market sharing was maintained up until the second world war.

had a decisive influence upon the price paid. The marketing organisation thus made for differences in local prices paid to middlemen at various buying centres. The only reliable price for which a record is available for the period 1906/38 is thus the f.o.b. prices.

Use of the known f.o.b. prices as opposed to the producer price would in any case be necessary due to the various local currencies preferred by both producers and middlemen in the palm products trade.¹ The main local currencies were manillas (horse-shoe shaped pieces of brass), copper wires and cowries. Each currency was predominantly used within a separate trading area. Since neither the exchange rate of the local currencies in terms of sterling for the period 1906/1931 is known nor the actual prices received by the producer, an estimate of such prices is difficult to arrive at. The producer prices used in the analysis are therefore those commencing from the year 1949 when the marketing system was re-organised and announced annual producer prices were introduced. The producer prices from 1949 are, in the case of palm oil, those of the various

¹ Preference for local currencies in the trade can be inferred from the following statement by J. Farquhar. He said "Trade is restricted to buyers who can buy in the native currency (this applies to the European as well as the native), and the result is that all through the off season merchants endeavour to get together native currency with which to trade in the oil season, and those who are unsuccessful cornerers of native currency are unable to purchase palm oil and kernels on a large scale." J. Farquhar, op.cit., p. 39.

grades purchased by the Marketing Board. In the analysis these prices are used either separately or as an average for all the grades. The choice depends upon the specific problems examined.

The palm oil U.K. c.i.f. prices used for the period 1906/38 are the only available prices for palm oil imported from Bonny and Old Calabar - the two major areas of palm product shipment in Nigeria up until 1938. The U.K. c.i.f. prices for the period 1939/48 are calculated from the average monthly (Liverpool) prices for Nigerian oil shipped from Lagos as given in the United Nations Yearbook of Food and Agricultural Statistics, 1950. For the period 1949/1965, c.i.f. prices for Nigerian oil purchased by the Nigeria Marketing Board are those recorded in the Board's annual reports. In the early period therefore the c.i.f. prices used in the analysis are for oil shipped from South Eastern Nigeria only and not for all the Nigerian palm oil. Also, the c.i.f. prices for the period 1906/65 are average yearly prices for all the grades of oil exported.

Summary

The palm tree is the most important wild tree¹ of economic significance in Nigeria. Its direct importance

¹ Production from plantation fruits did not commence until 1955, and export from plantation palm products is still less than 6% of total export figures as at 1965. Thus almost all Nigerian palm products are from wild palm trees.

to the producers derives from the various local usages of its products and from the income originating from its local and export sale. These facts, reinforced by the disadvantage of the poor soil characteristic of the Nigerian palm belt, render the exploitation of the tree the most essential vocation for the farmers. The economic significance of the trade in palm products to the country lies in the high proportion of export duty contributed by it, the export value and other internal revenues originating from its trade as compared with those of other export primary products. It is also of major economic importance as the industry which employs the highest amount of labour in the Eastern Nigerian economy.

Export demand for the products - palm oil and the palm kernel - is historically attributed to the increased use of these products as manufacturing raw material in Britain. Their supply by Nigeria was a consequence of an effective demand for the latent surplus productive capacity in the traditional industry.

Palm oil and palm kernels are the joint products of the palm fruit. Differences in their export tonnage reflect the influence of such factors as differences in price, differences in labour input in extraction and processing, and in harvesting times, and quality control. The statistics of the tonnage

of both products exported within a particular year are only a rough indication of total exportable palm products for that year. This problem arises from the lack of shipping space which affected the evacuation of some quantity of palm products purchased for export.

The absence of comprehensive data on the early producer price (i.e. 1906 to 1948), the predominance of the use of local currency in the early trade, and the organisation of the early trade constitute a problem in the quantitative analysis of such aspects as producers' responsiveness. The assessment of early motivation in the trade involving prices must thus be a rough evaluation based on qualitative evidence; an estimate of exchange rates between local currencies and sterling for the years in which data are available; the barter terms of trade between palm products and selected trade goods; and the f.o.b. prices.

The essential problems in the analysis that follows are those concerned with the investigation of the producers' economic rationality in terms of income maximisation.

Chapter 2

British Policy and the Import of Nigerian Palm Products 1906/38

This chapter examines those factors which influenced the changes in overseas imports of Nigerian palm products in the period 1906/38. Emphasis is on British imports because she was Nigeria's major market from 1914 - a result of Nigerian colonial status in the then Empire.¹ British import of Nigerian palm products was closely related to her raw material input requirements in the manufacture of products such as soap and margarine. As palm products are substitutes for other vegetable oils and oilseeds used in the manufacture of soap and other products, it is first necessary to consider world production of the major vegetable oils and oilseeds (including palm products) and British import of them as a pre-requisite to understanding British imports of palm products in general and those of Nigeria in particular. This background is also necessary since changes in British import were not only influenced by the relative prices

¹ Prior to 1914, Germany was Nigeria's major export market for palm kernels. This position was reversed because of Britain's trade and colonial policies. See Cd. 8247 (London, H.M.S.O. 1916), pp. 22 and 5.

of the other vegetable oils and oilseeds, but also by British trade policy which selectively influenced the import of certain world vegetable oils and oilseeds.

World Production and British Imports of
Major Vegetable Oils and Oilseeds

Ten products of herbaceous crops and tree crops constitute the major world vegetable oils and oilseeds in international trade. The herbaceous crops are:- cotton seeds, groundnuts, linseeds, soya beans, sunflower seeds, rape seeds, and sesame seeds. The main tree crops are coconuts, olives and palm oil. In 1909/13, world production of these ten vegetable oils and oilseeds (in tons) formed 95.7% of total world production of vegetable oils and oilseeds, and in 1937, it was 95.6% (see Table 2.1). The table also shows that the index of production (with the average for 1924/28 as the base year) of these vegetable oils and oilseeds, generally increased between 1909 and 1937. On the other hand, their individual yearly proportion of total world vegetable oils and oilseeds varied considerably. While, for example, the average yearly proportion of soya bean seeds had continuously declined from 9.3% in 1924/28 to 8.2% in 1937, that of palm oil had increased from 5.3% in 1924/28 to 7.4% in 1937.

The changes in the proportion of individual vegetable oils and oilseeds consumed in Britain, as will be seen, were associated with four essential

factors: the relative oil yield and chemical contents of the vegetable oils and oilseeds and the importance of the latter in a particular line of manufacture; the relative prices of the oilseeds and oils; the varying rate of increase in demand for the final products; and the influence of trade policies pursued by Britain and other importing countries.

Among the ten major world herbaceous crops and tree crops, the U.K. import figures (see Table 2.2) show that only six were those principally imported in Britain.¹ Two additional oilseeds - palm kernels and rape seed - were also imported. Of these, four main vegetable oils and oilseeds showed substantial increases over the period 1909 to 1936. These were groundnuts, palm oil, coconuts and palm kernels. Groundnut imports increased from an average of 3,000 metric tons in 1909/13 to 188,000 metric tons in 1936. Palm oil increased from 35,000 metric tons to 119,000 metric tons over the same period. Copra increased from an average of 24,000 metric tons in 1909/13 to 126,000 metric tons in 1936, while palm kernels increased from 22,000 metric tons to 148,000 metric tons over the same period.

¹ The choice of oilseeds by British importers, as will be seen, was to a large extent the result of several British trade policies among which was the 1931 and 1935 Empire tariff policies by which imports of oilseeds from Empire countries were duty-free in Britain. See pp. 45-49.

One of the reasons for British manufacturers' preference for these four oilseeds and oil was their relatively higher oil yield per unit weight of oilseed as compared with such oilseeds as rape seed and soya bean seed. This is illustrated by converting the United Kingdom imports of vegetable oils and oilseeds shown in Table 2.2 to their oil equivalent by using the oil and cake equivalent yields applied by the International Institute of Agriculture in 1939¹ (see Tables 2.3 and 2.4). The table also shows palm oil and olive oil - two vegetable oils not imported in the form of oilseeds or nuts. Because of the relatively high oil yield of groundnuts, copra, and palm kernels, the quantity of oil obtained from these oilseeds was more than that of the other vegetable oils and oilseeds imported. While, for example, in the period 1924/28 the average yearly 57,000 metric tons of copra imported in Britain yielded 36,000 tons of oil, the average yearly 117,000 metric tons of soya beans imported during the same period only yielded 19,000 metric tons of oil.

The choice of these oilseeds - groundnuts, copra, palm kernels - was further enhanced by their chemical

¹ International Institute of Agriculture, Studies of Principal Agricultural Products in the World Market, No. 5, Oils and Fats: Production and International Trade, Part II, Rome 1939, p. 243.

content. In the manufacture of edible fats, e.g. margarine and lard, oilseeds which contained a high percentage of lauric acid were mostly used. Important among these oilseeds were groundnuts, copra and palm kernels which, in addition to their chemical quality, had a relatively high oil yield per unit of weight. As shown in Table 2.6, these three oilseeds were among those most used in the manufacture of margarine in Britain.

The lauric acid content in palm oil was relatively lower than those of groundnuts, copra, and palm kernels. However, it had a decisive advantage over all the other oilseeds in that it was imported in processed form rather than as seeds or nuts. Thus because of the known savings in crushing cost and the fact that the lauric acid content in palm oil was ideal for the manufacture of soap, palm oil, groundnut oil, copra oil, and palm kernel oil were substitutes in the manufacture of soap as shown in Table 2.5. The table shows that the percentage of these four vegetable oils in comparison with all the vegetable oils used in the manufacture of soap in the U.K. in the period 1927/38 varied between 79% and 92%.

The import of these four vegetable oils in Britain in the period 1909/38 was encouraged by the continuous increase in the final demand for the product manufactured with vegetable oils as input. Table 2.7

shows the quantity of soap produced in the U.K. for selected years between 1909 and 1938. No production figures are available for 1914-23. However, for the years in which production statistics are available, there was a continuous growth in soap production in Britain. Average annual production for 1909-13 was 350,000 tons. The 1924-28 average was 424,000 tons; and by 1938 it had risen to an annual tonnage of 540,000 tons. This increase in soap consumption was accompanied by increases in the ratio of vegetable oils to a unit of soap manufactured. For example, in 1930 in the 421,000 tons of soap produced in the United Kingdom industries 108,000 tons of vegetable oils were used¹, i.e. a ratio of all vegetable oils to a unit of soap of .27 : 1. In 1938 this ratio was .37 : 1.² The high ratio of vegetable oils input in the manufacture of soap was thus maintained along with the growth in soap production.

As competitive products in manufacture, the price movements of the four oilseeds and oils were very similar throughout the period 1911 to 1938. Table 2.8 shows the movements of the U.K. (c.i.f.) prices per ton for palm oil, palm kernels, copra and

¹ See Tables 2.5 and 2.7.

² These are ratios of the weight of a unit of the final product - soap - to that of vegetable oil input.

groundnuts.¹ The price indices of these oilseeds and oil show pronounced changes associated with changes in world economic and political conditions. Before World War I their price indices (with 1924/28 as base year) varied roughly between 80 and 114. During World War I, there was a very sharp rise in prices for all the vegetable oils. The index of palm oil (U.K. c.i.f. prices) rose from 104 in 1916 to 203.8 in 1919. Those of palm kernels, copra and groundnuts also showed similar movements. U.K. (c.i.f.) prices for the vegetable oils were generally lower in 1920/28 than during the war but higher than the pre-war years. The great depression had a depressing effect on all the prices.

The relative prices of these vegetable oils were pertinent in determining the volume of each imported over the period 1911 to 1936. Appendix 2.1 shows the calculation of the base year weighted aggregate price

¹ The U.K. c.i.f. prices for these products are also considered as world prices. This is because in the markets for oils and fats, "Price movements on all the markets" were "independent of each other owing to the general adoption of protectionist policies". Secondly, since the U.K. was "the principal importing country for palm products and copra, the London (or sometimes the Liverpool or Hull) market prices were accepted as indicative of world price movement" Dr. J.P. van Aartsen "Prices of Oils and Fats" in International Institute of Agriculture, Oils and Fats: Production and International Trade, Part II, Rome, 1939, p. 417.

and quantity¹ indices for palm oil substitutes - copra, groundnuts, palm kernels - as well as the price and quantity index for palm oil within two distinct periods - 1911/13 and 1924/28; and 1929 to 1936. It also shows the price and quantity index of palm oil relative to those of the substitutes within the same periods.² Within the periods 1911/13 and 1924/28, the price of palm oil rose by 17.3% relative to that of the other substitutes. The relatively high price reflected in the 80.5% decline in the quantity of palm oil imported relative to that of the substitutes. On the other hand, over the period 1929 to 1936 - the depression years and the period immediately after (period of declining c.i.f. prices for all the oilseeds) - the price of palm oil relative to that of the substitutes fell by an average of 16.5%. The accompanying drop in palm oil prices reflected in the average increase in palm oil imports of 12.0% relative

¹ The quantity used in the calculation of the composite quantity index of the substitutes is the oil equivalent of the oilseeds.

² The periods 1911/13 and 1924/28 are the only two for which average statistical figures for quantities of the vegetable oils imported are available. 1929 marks the beginning of the second period because from that year, the prices of all the vegetable oils were adversely affected by the depression. The second period ends in 1936 - the last year for which statistical figures for quantity of the vegetable oils imported are available.

to that of substitutes. Thus over the period 1911/36, changes in the relative prices of palm oil were generally inversely related to the changes in the relative quantity of that product imported.

The volume of Nigerian palm products imported by Britain over the period 1909-38 was, to a large extent, influenced by British economic policies (affecting the imports of vegetable oils) and similar policies pursued by other foreign countries. These policies, as will be seen, can conveniently be classified into those which either directly or indirectly affected the British industries using palm products as industrial raw materials; those directed towards the then non-Empire countries; and foreign (non-British) policies affecting the consumption of vegetable oils in the individual countries. These policies and the extent to which they affected the import of Nigerian palm products is examined below.

Changes in the Import Volume of Nigerian Palm Products

Nigeria was the main source of palm products import in the world market in the period 1924/38 - the only period when comprehensive statistics of production from the main producing countries are available. Over the period, the import of Nigerian palm oil and palm kernels by the main importing

countries (see Tables 2.9 and 3.4) averaged respectively 49.3% and 55.1% of the total production from the major producing countries. In the period 1928-38, a very high proportion of British palm oil and palm kernel imports came from Nigeria. As shown in Table 2.11, an average of 82.3% and 80.4% of palm oil and palm kernels respectively which was imported to Britain, originated from Nigeria.

The index of the tonnage of palm products (with 1923 as the base year¹) and the tonnage imported from Nigeria by the major importing countries in the period 1906/38 is shown in Table 2.12. The combined import figure by Britain and other foreign countries showed a gradual increase from 1906 to 1923 with variations in tonnage between 57,260 and 100,967 tons for palm oil and between 113,347 tons and 223,172 tons for palm kernels. From 1924 onwards, the level of the palm oil imported from Nigeria rose to 127,083 tons and for the rest of the period varied between 110,243 tons and 162,779 tons. The tonnage of palm kernels purchased also showed a similar pattern of increase. In 1925 it reached a record level of 272,925 tons and varied between 249,100 tons and 386,143 tons in the period 1926 to

¹ 1923 is chosen as the base year because Nigerian trade in palm products had by 1923 returned to normal after the post-war transport (shipping) difficulties. See Nigeria: Annual Report on the Customs Department of Nigeria, Lagos 1928, p. 38.

1936. For the period 1906/38, foreign and British imports of Nigerian palm oil and palm kernels increased at an average yearly rate of 2,563 tons (i.e. an annual average increase of 2.5%) and 6,300 tons¹ (i.e. an annual average increase of 2.8%) for palm oil and palm kernels respectively.

An important factor which influenced the above pattern of overseas imports of Nigerian palm products was a change in the distribution of the tonnage of the products imported by the major importing countries. In order to examine the causes of this change and its effect on Nigerian trade in palm products, it is necessary to examine the pattern of external distribution of Nigerian palm products from the period before World War I to 1938.

The distribution of Nigerian palm products to major importing countries is shown in Tables 2.13, 2.14 and 2.15. Table 2.13 shows the pre-World War I pattern of distribution for palm oil and palm kernels, while Tables 2.14 and 2.15 are for palm oil and palm kernels for the period 1919/38. In 1913, the United Kingdom and Germany were the two main importers of Nigerian palm products. Both countries, however, differed in their demand for the two products. While,

¹ Figures calculated from Table 2.12.

for instance, the United Kingdom imported 83.4% of the total tonnage of palm oil from West Africa, she only imported 15.0% of palm kernels. On the other hand, Germany imported 77.4% of total palm kernels imported and only 11.7% palm oil. Between World War I and the eve of World War II British consumption of Nigerian palm oil as a proportion of total Nigerian palm oil exported varied between 51.6% and 93.5% with the exception of 1927 and 1932 when it averaged 33.6%. Britain was also the most important market for Nigerian palm kernels between 1919 and 1938. This was particularly marked in 1919/23 when she imported between 72.6% and 99.8% of total Nigerian export palm kernels. With the exception of 1925/30 when Germany, the United States of America, Holland and Italy had a relatively increasing share of the imports, British imports remained by far the highest throughout the period 1914/38.

Factors affecting External Changes in the
Distribution of Nigerian Palm Products
Exports

The above changes in the distribution of Nigerian palm products among the major importing countries arose mainly from the external policy pursued by both Britain and other foreign countries after World War I.

The first of these policies was the British trade

policy specifically directed against Germany¹ - the most significant importer of Nigerian palm products before World War I (see Table 2.13). The British parliamentary report in 1916 had maintained that

"For many years before the war German traders in British Colonies in West Africa, as throughout the rest of the world, have enjoyed - and abused - British hospitality ... Unless and until, therefore, there is a decisive change in the national policy of Germany it is to be hoped that never again will the opportunity for such commercial preparation be given to that country, so far as the Dominions and Colonies under the British Crown are concerned."²

In October 1919 an export duty of £2 per ton on exports to foreign countries for palm kernels exported from Nigeria was imposed.³ The export duty continued until October 1922. The initial period for the imposition of the £2 export duty recommended by the Committee on Edible and Oil-Producing Nuts and Seeds was five years. After such date "if a duty of £2 per ton was found insufficient to divert the trade to this country, the amount should be raised until the duty is adequate to effect its purpose."⁴ However, through

¹ The British parliamentary report in 1916 emphasised that "the question is one between this country and Germany ... As against the loss of the German market, however, must be set the great expansion of the British home market". Cd. 8247, op.cit., pp. 22-23.

² Ibid., p. 22.

³ Legislative Council, Nigeria, Address by the Governor, Sir Hugh Clifford, 11th February 1924. The duty so imposed was to be collected by the Nigerian government.

⁴ Cd. 8247, op.cit., p. 22.

parliamentary opposition,¹ arising from the possible adverse effect of the duty on producer prices and income, the export duty was terminated in October 1922.

In 1920/22 when the export duty was in operation, British imports of Nigerian palm kernels averaged 97.1% while that of Germany was 1.6% (see Table 2.15). The geographical distribution of Nigerian exports of palm kernel between 1919 and 1938 also shows that Britain became the dominant importer of Nigerian palm kernels. Her average percentage share rose from 15% in 1913 (see Table 2.13) to an average of 58.1% between 1919 and 1938. In contrast, German imports of Nigerian palm kernels had declined from 77.4% to an average of 32.1% over the same period (see Tables 2.13 and 2.15).

The second British economic policy which affected the distribution of Nigerian palm products was British monetary policy. Two years after the termination of the export duty Britain returned to the Gold Standard (1925) at a parity at which the pound sterling was over-valued. The over-valuation of the pound between 1925 and 1931 adversely affected the British palm kernels crushing industry through its impact on the exports of palm kernel oil (see Table 2.16). British

¹ House of Commons Debates 5th Series, Vol. CC 2012, 4th April 1922.

exports of palm kernel oil to the U.S.A., Poland, Germany, and the Netherlands, which had reached a level of 35,572 tons in 1925 had by 1931 declined to 6,834 tons. The decline in its exports in turn led to the reduction in the volume of palm kernels imported from Nigeria. British imports in absolute terms fell from 170,240 tons in 1924 to 96,044 tons in 1931. And proportionately, her share of the Nigerian palm kernel export market had dwindled from 95.0% in 1922 to 38.0% in 1931 (see Table 2.15).

The reduction in British demand was to some measure compensated by increased purchases by foreign countries. The total tonnage of palm kernels imported from Nigeria which had by 1925 reached an all-time peak of 272,925 tons, only declined to between 246,537 tons and 260,022 tons within the period 1925/31 (see Table 2.12). German imports had risen from 8,389 tons in 1922 (i.e. 4.7% of the total exports) to 136,221 tons in 1930 (i.e. 53.1% of total Nigerian exports).

The adverse effect of the over-valued sterling on British imports of palm products was moderately alleviated by her tariff policy of 1st March, 1931, and of 1935. A general tariff of at least 10% ad valorem was imposed on foreign vegetable oils and fats, while

imports from the Empire countries were duty free.¹

This tariff policy resulted in some increased import by Britain. British import of palm oil increased from 30,230 tons in 1931 to 100,874 tons in 1936. Her import of palm kernels also increased from 96,044 tons to 139,260 tons during the same period (see Tables 2.14 and 2.15).

The expected advantage of the duty free imports as an incentive to increased imports of vegetable oils and oilseeds - including palm products from Nigeria - was, however, short-lived. Foreign countries which were both customers for British processed palm kernel oil and direct importers of Nigerian palm products, had imposed a series of limitations on the consumption of those oils and fats competing with butter in their respective countries.² These limitations in turn

¹ International Institute of Agriculture, Oils and Fats: Production and International Trade, No. 5, Part II, Rome 1939, pp. 262-265.

² The foreign countries were the U.S.A. (1930); Germany (1932); France (1934); and Holland (1935). On the 23rd Dec. 1932, and March 1933, the German government promulgated a decree which fixed a quota for the production of margarine at "60% of the quantity manufactured during the last quarter of 1932". Other measures adopted by Germany included the imposition of a compensation tax of .50 Reichsmarks per kg. on margarine, vegetable oils and edible oils, a customs duty of 75 RM per 100 kg. on margarine imports. In the U.S.A. the Tariff Act of 1930 imposed a 14 cent per lb. tax on imported margarine and a 1% duty on edible palm kernel oil. And the Revenue Act of 1934 further placed an excise duty of 3 cents per lb. on the first domestic processing of palm kernel. In France an import quota was imposed on foreign vegetable oil products in 1934. And in Holland the margarine industry was compelled by the government to employ at least "60% of raw materials coming from the Netherland Indies". See International Institute of Agriculture, op.cit., pp. 44-58; 179-184; 217-234; 270 and 329.

adversely affected their share of imports and resulted in a re-distribution of Nigerian palm kernels and palm oil overseas imports in favour of Britain. For example, the tonnage of palm kernels imported by Germany in 1930 - 136,221 tons - had by 1935 declined to 77,900 tons (see Table 2.15). Similarly, the U.S.A. import of palm oil had declined from 61,145 tons in 1930 to only 6,334 tons in 1934. On the other hand, British share of imports from Nigeria rose from 38.0% in 1931 to 52.2% in 1935.

The loss of the German export market for palm kernels as a result of her internal policy on vegetable oils was, to some measure, arrested by the Anglo-German Payment Agreement made in Berlin in 1st November, 1934. Article 2 of the agreement stipulated that

"the German Government, in allocating foreign exchange for purposes of raw materials and foodstuff which Germany has been accustomed to purchase either through the United Kingdom or direct from the British Colonies, will take no measures to reduce the customary proportions enjoyed by the United Kingdom and the British Colonies in the supply to Germany of those goods."¹

The improvement in the proportion of Nigerian palm kernels imported by Germany (from 29.1% in 1935 to an average of 39.2% between 1936 and 1938) suggests that Nigerian exports to Germany were, to some extent,

¹ Cmd. 4963; Treaty Series, No. 26 (1935) London 1935, p. 6.

protected in spite of the German internal policy on vegetable oil import. The effect of the British tariff policy and, to a limited extent, the Anglo-German agreement of 1934, were among the major factors which influenced the moderate rate of annual increase in the level of palm products imported from Nigeria between 1930 and the eve of World War II.

Effect of British Policies on Nigerian Trade in Palm Products

To what extent did Nigeria benefit from the various British policies pursued between 1919 and 1935? In relation to the tonnage of palm products exported, both the 1919/22 and the 1925/31 policies adversely affected Nigerian palm products export tonnage. On the other hand, the preferential tariff of 1931 and 1935 contributed to increases in the tonnage exported. While improvement in the export tonnage was of advantage, the effect of price changes on the export value of Nigerian palm products must be taken into account. Table 2.17 shows the export value of Nigerian palm products for 1906 to 1938. Since the policy of 1919/22 was more concerned with palm kernels than with palm oil, it is necessary to examine the export value of palm kernels more closely.

The export value of palm kernels rose from about £1m in 1906 to about £3m in 1913. During the war

years of 1914 and 1916 it declined to between £1m and £2m. From 1917 to 1920 there was a continuous rise from £3.2m to £5.7m. In 1921 and 1922 palm kernels export value declined to about £2.8m; and in 1923 it increased to £3.7m. Between 1924 and 1929 the export value for palm kernels varied narrowly - between £4.2m and £4.9m. The effect of the depression reflected on palm kernels export value from 1930 to 1934 when it declined from £3.7m to £1.6m. In 1935/38 it varied between £2.2m and £3.6m. The total annual export value for palm products in 1906/1938 also showed similar changes (see Table 2.17).

In considering the period 1919/22 (years of export duty policy), the decline in palm products export tonnage accompanied by the comparatively low prices adversely affected the export value of palm products in 1921 and 1922. Export value of palm products declined from £10.4m in 1920 to between £4.5m and £5.5m in 1921 and 1922. In 1925/31 the adverse effect of the over-valued sterling and the consequent reduction in British imports which could have reflected unfavourably on the export value, did not produce a decline because of the increased imports by other foreign countries. After 1930 the Empire tariff policy of 1931 and 1935, though advantageous in inducing increased British imports, did not improve

the export value of Nigerian palm products because of the adverse effect of the depression years on prices. Such advantage as was derived from increases in export tonnage made very little impact upon the export value of Nigerian palm products in 1931/38.

Palm products export value during 1919 to 1938 does not show that Nigeria benefited significantly from the British economic policies pursued during the same period. As Professor A.J. Brown inferred,

"There is ... some reason to believe that Nigeria did not receive a net benefit as a result of these policies. The extent to which the Ottawa duties benefited Nigeria in British market does not appear to have been great; she was dependent to no small extent on markets outside the Empire, and it was in those that her position was most precarious."¹

Nigeria did not sell to markets outside the Empire after 1919 as much as before World War I, mainly as a result of the above policies which did not improve her export earnings from the palm products trade. The policies only assured an export market for Nigerian palm products. At the same time, they provided for Britain a source of raw material import in a vital product at a period when the low prices of the depression years could hardly have furthered improvements in palm products' export value.

¹ A.J. Brown, "Economic Problems of a Tropical Dependency" in Margery Perham (ed.) Mining, Commerce, and Finance in Nigeria, London 1947, p. 337.

One of the significant aspects of the analysis of overseas imports of Nigerian palm products is that the downward price trend of 1929 to 1938 did not affect the rising trend in the volume of Nigerian palm products produced for exports. What other factors contributed to such an increase? The question cannot be adequately answered until both the internal factors affecting export production and marketing, as well as those internal policy measures designed to promote production and exports of palm products, are examined. The latter aspect forms the topic of the next analysis.

Summary

Palm products were among the main vegetable oils and oilseeds used as raw materials in British industries between 1906 and 1938. World production figures of the main vegetable oils show that between 1909 and 1938, the highest rates of annual increase in production were for coconut, groundnuts, palm oil and palm kernels. These four are substitutes in industrial usage; and their imports were among the highest of all the vegetable oils and oilseeds in Britain. As a consequence of their being substitutes, their U.K. (c.i.f.) price trends for 1911 to 1938 were closely related.

British manufacturers' preference for any of the four oilseeds and oil depended partly on their relative prices and partly on the demand for the final product.

The effect of World War I, British policies pursued between 1919 and 1925, internal policies of other major importing countries, and the world depression were factors affecting the fluctuation in both the export tonnage and the prices of palm products. The most important of these factors which influenced the export volume and value of Nigerian palm products were the British policies of 1919/22; 1925/31; and 1931/35. The fluctuation in export value associated with the tonnage exported, shows that Nigeria did not derive a noticeable advantage as a result of the British policies.

Chapter 3

Internal Policy and the Export Production of Palm Products 1906-1938

This chapter examines those internal policy measures which influenced export supply. It is argued below that increases in export production as shown in the last chapter, occurred not because of either the re-organisation of the production system or the technique of production but because of improvement in administrative and political control over the producing regions which led to an expansion of the harvesting and gathering areas as well as ensuring a relatively safe local market outlet.¹

Government attitude towards export production

The government's basic policy was that there should be no major changes in the local system of palm products export production. Resource utilization and its organisation in production should, as a result, continue under local systems adopted by farmers. The main changes envisaged by the government were in the

¹ "Safe local market outlet" as used here refers to safety in the conveyance of palm products from villages to sales depot. Problems of communication arising from the suspicion and fears of possible intrusion by foreigners in the social and economic life of isolated villages did not promote free movement through neighbouring areas. See e.g. Lord Lugard "British Policy in Nigeria" in Africa, Vol. X, No. 4, Oct. 1937, p. 385.

processing methods which were to be introduced only after their justification by research results. Such processing innovations, accompanied by the development of roads and railways, the maintenance of law and order and the inspection of products would lead to an improvement in both the quality and quantity of palm products exported.

The local methods of production and their organisation as adopted in the production of palm products for export in 1906/38 is discussed in Appendix 1.1. Briefly, it comprised the harvesting of wild fruits from communally owned land and individual plots around dwelling houses, the extraction of oil by boiling or fermenting the fruit, and the extraction of kernels by cracking the nuts between stones. The crude nature of the production process adopted by farmers was described by A. McPhee thus: "The producing, marketing and transporting systems were of the most primitive description. In fact the process since the 'Nineties of last century has been the superimposition of the twentieth century after Christ on the twentieth century before Christ."¹ The primitive hand extraction method used was wasteful as compared with the alternative method of mechanical extraction. This wastage which

¹ A. McPhee, The Economic Revolution in British West Africa, Aberdeen, Routledge & Sons, 1926, p. 8.

reduced the potential export supply of palm products was recognised by the government as early as 1920.¹ Prominent British manufacturers also recognised the defects of the production system with respect to product quality and tonnage produced, and offered, as a result, to introduce an alternative plantation system of production. These requests were rejected.²

Why was government policy in favour of local production systems³ with known disadvantages in production for the export market. One of the initial reasons was political rather than economic. As

¹ In 1921 G.C. Dudgeon, C.B.E., had publicised in his writings the idea that "the neglect in West Africa of the wild trees, the imperfect methods followed in extracting the palm oil ... are questions which now need renewed attention, and in fact the entire subject of the development of the palm oil industry in West Africa demands the most serious study in all its aspects if the industry is not to be supplanted by the enterprise of other countries." The Agricultural and Forest Products of British West Africa, Imperial Institute Handbooks, London, 1922, preface. Cf. A.D.A. De KatAngelino, Colonial Policy, translated by G.J. Renier, vol. II, The Hague, 1931, pp. 427-491. De KatAngelino argued that colonial governments would only justify themselves before world opinion if they succeeded in improving agricultural techniques and thus increased production within their colonial territories.

² In 1907, 1909 and 1920, Lord Leverhulme, a prominent British soap manufacturer, had approached both the British and the Nigerian governments for land concessions to establish oil palm plantations. His requests were rejected because of the possible conflict of such concessions with the local land tenure system. See Lord Lugard, "British Policy in Nigeria", op.cit., p. 395.

³ Two local systems of production were adopted by local producers. See Appendix 1.1.

explained by the first Governor of Nigeria,
Sir Frederick Lugard,

"The African possessions of Great Britain were not ... acquired ... in pursuance of a definite policy ... The older settlements on the West Coast were originally maintained to assist in putting an end to the overseas slave trade, and so little were they valued that a Royal Commission ... recommended their abandonment as soon as convenient."¹

However, in the 20th century, "The desire to extend protection to Nigerians and to introduce justice and peace have from time to time led to the enlargement of frontiers, for law and order cannot exist side by side with barbarism."² British acquisition of Nigeria was therefore initially without a definite policy and ultimately interest was directed towards political control as a foundation for future economic benefit. Hugh E. Egerton's work on British Colonial Policy also shows that unlike Southern Rhodesia, it was not an immediate "commercial greed that brought about expansion"³ but administrative and political control. Therefore, over the development of any agricultural export product, the Government took the line that it was "the business of government not itself to engage

¹ Sir Frederick Lugard, The Dual Mandate in British Tropical Africa, London, 1922, p. 9.

² Ibid., p. 10.

³ Hugh E. Egerton, British Colonial Policy in the XXth Century, London, 1922, p. 217.

in commercial enterprises of any kind, but to prepare and maintain the conditions - political, moral and material - upon which the success or failure of such enterprises in a very large measure depends."¹ The government's early lack of interest in the development of commercial projects thus meant that the development of such an industry as the oil palm should rest on local farmers or private enterprises approved by the government.

The development of the industry, as envisaged by British private enterprise,² was along plantation lines. Such a change in the production system was opposed by the government. In his address to the Nigerian Council in 1920, Sir Hugh Clifford, the Governor of Nigeria, stated

"that agricultural industries in tropical countries which are mainly, or exclusively, in the hands of the native peasantry (a) Have a firmer root than similar enterprises when owned and managed by Europeans, because they are natural growths, not artificial creations, and are self-supporting, as regards labour, while European plantations can only be maintained by some system of organised immigration or by some form of compulsory labour; (b) Are incomparably the cheapest instruments for the production of agricultural produce on a large scale that have yet been devised; and (c) Are capable of a rapidity of expansion and a progressive increase of output that beggar every record of the past, ... For these reasons, I am very strongly opposed to any encouragement being given by the Administration for which I am responsible to projects that have for their object the creation

¹ Nigerian Council, Address by the Governor, Sir Hugh Clifford, 20th Dec. 1920, p. 57.

² See p.58, footnote 2.

of European owned and managed plantations to replace, or even to supplement, agricultural industries which are already in existence, or which are capable of being developed by the peasantry of Nigeria."¹

Lord Leverhulme's second attempt at obtaining a freehold right for palm plantation development was rejected in 1920.²

After the failure of Lord Leverhulme to convince the government about palm plantation development, the interest of private British companies waned. The Chairman of the African Section of the Manchester Chamber of Commerce, who also represented London, Liverpool and Manchester upon the joint West African Committee at the Colonial Office, said, "I want to say that I know no responsible official or trader who advocates that system. We are all dead against it as well as the alienation of land from the native."³ Their decision against plantation development in Nigeria was not only due to the opposition from the government, but also to the experience gained from the failure of plantation development in Sierra Leone and the Gold Coast (Ghana) where government opposition was

¹ Nigerian Council, Address by the Governor, Sir Hugh Clifford, 20th Dec. 1920, Lagos, pp. 186/7.

² See p. 58, footnote 2.

³ F. Hunt, West Africa, 24th April, 1926.

not as pronounced as in Nigeria. These plantations failed because "There were difficulties with regard to labour recruitment, and to disease from neighbouring native ... trees."¹ The door was, for the time being, closed against the development of either government or private enterprise plantations.

Sir Hugh Clifford's objections to the setting up of private plantations were mainly economic but an examination of the facts shows that political and administrative reasons were the major causes. The two essential factors relevant to the successful establishment of plantations for export production were land and labour. The control of both these factors had major implications for the maintenance of law and order. In the main palm belt of Southern Nigeria, "land tenure is bound up not only with all the rules which govern its allocation, usage and inheritance, but more especially with the economy of the community, and with its system of family kinship, chieftainship, and religion".² Any interference with the land tenure system through acquiring native land would thus have raised more political problems than the administration could have conveniently dealt with. E.W. Evans summed up the

¹ Margery Perham, Native Administration in Nigeria, London, O.U.P. 1937, p. 309.

² Lord Lugard, "British Policy in Nigeria" in Africa, Vol. X, No. 4, Oct. 1937, p. 393.

possibility of the conflict he envisaged in these words, "replacement of existing institutions based on land needs men and money if not munitions."¹ Local reaction to a possible interference with land was voiced by the chiefs as early as 1913 when they expressed the view that "to deprive one of ownership of his land" was "worse than murder or burglary" and expressed deep concern over the grant of concessions by the Sierra Leone government to Lever Brothers. Such a move, explained the chiefs,

"looks like an intention on the part of the government to divide up the land of the colonies into estates for their people as their statesman, named Chamberlain, had suggested by saying that the colonies were under-developed estates to be developed in the interest and for the benefit of the owners."²

Since the basis of effective administrative rule pursued by the first Governor, Lord Lugard, was to ensure contact with the people through local chiefs, it was essential not to disrupt the administrative machinery by

¹ E.W. Evans, "Principles and Methods of Administration in the British Colonial Empire" in Colonial Administration, London 1950, p. 10.

² The Land Tenure Question in West Africa, A Report of Meetings Held in Different Native Towns, Lagos, 1913, p. 6.

acquiring local land.¹ Margery Perham describes the importance of land as the basis of the success of the administrative policy pursued in Nigeria thus: "The development of Africans from the basis of their own institutions is not conceivable apart from their security upon the land upon which those institutions have been developed."²

The extent to which local opposition to the acquisition of land would have been taken into account had the government's main motives been economic, is difficult to ascertain. As explained by W.K. Hancock, "Great Britain's policy in Africa was far less clear-cut than that of other European powers."³

¹ The motive of avoidance of administrative conflict with the chiefs can be inferred from the following passages by the Governor, Lord Lugard: "To abandon the policy of ruling them through their own chiefs, and to substitute the direct rule of the British officer, is to forego the high ideal of leading the backward races, by their own efforts, and in their own way, to raise themselves to a higher place of social organisation." The Dual Mandate in British Tropical Africa, London, 1922, p. 215. Cf. Legislative Council Debates, 2nd Session, Lagos, 1924, p. 17, where it stated that "The policy of the Nigerian government with regard to land in the Southern provinces is to perpetuate and to maintain in their integrity, as far as possible, all native customary rights therein ... There is no intention whatsoever on the part of the Government to depart or to deviate from its declared policy."

² Margery Perham, op.cit., p. 304.

³ W.K. Hancock, Survey of British Commonwealth Affairs 1918-1939, vol. II, Part II, London 1942, p. 179.

"Sometimes they have compelled the native inhabitants to labour on their own land under European orders; at other times they have dispossessed them of their land so that European enterprise may itself produce, with servile or semi-servile labour, the commodities which Europe's markets have demanded."¹

Since the chiefs' opposition to land acquisition was respected in Nigeria and not in other colonies such as E. Africa, Southern Rhodesia and the West Indies, the government's attitude over the land question indicates that economic considerations were of secondary importance in Nigeria. This is seen in the contrast in policy between West Africa and the West Indies with respect to economic development. As pointed out by A. McPhee, in West Africa,

"The Imperial government had no definite policy of development ... In this matter British West Africa was a contrast to the West Indies where a definite policy of development by means of private English enterprise had been entered on from the 17th century onwards."²

Since there was no specific plan by the government for such development as in the West Indies, the political and administrative objective became the main initial pre-occupation of policy.

A second factor strengthening the policy against plantation production was population density, and this distinguished Southern Nigeria from other African

¹ Ibid., p. 163.

² A. McPhee, op.cit., p. 26.

Colonies. As Lord Lugard said, "Picture a population so dense that in some districts it reaches the incredible figure of 1,000 to the square mile."¹ Under such conditions it was argued that the establishment of palm plantations would create a pool of landless unemployed farmers without an alternative source of employment especially since palm plantations are not as employment creating as such plantation trees as rubber. The successful establishment of palm oil plantations in 1917 in British Malaya, in contrast to Nigeria was, for example, explained by Sir Alan Pim by the very relatively low population density in Malaya as compared with Southern Nigeria.²

Another factor, associated with government administrative policy in Nigeria which would have counted against the successful operation of a private plantation was labour recruitment. As emphasised by the Hon. W.G.A. Ormsby-Gore, M.P., in 1926, the British Government was "against the provision of compulsory labour for private profit."³ In the compulsory recruitment of labour for employment in Nigeria, he drew a "distinction between compulsory labour for essential public works and services, such as road

¹ Lord Lugard, "British Policy in Nigeria" in Africa, Vol. x, No. 4, Oct. 1937, p. 384.

² Sir Alan Pim, Colonial Agricultural Production, London 1946, p. 133.

³ Cmd. 2744 (London, H.M.S.O., 1926), p. 107.

construction and road maintenance, and labour for plantations".¹ Private recruitment of local labour conflicted with the idea of the local inhabitants because it was reminiscent of slave labour.

"To the villager ... wage-earning employment usually connoted a degradation from the independent status of the farmer to that of a hireling. Indeed, working for another man, unless when governed by custom, was traditionally associated with slavery."²

It may of course be argued that

"In East Africa, in South Africa, in the West Indies and British Guiana, and in Malaya the policy of the Imperial Government has been to promote the development of the country by the natives or by imported aliens - Africans, Indians, Chinese - mainly with a view to the profit of English planters and companies."³

Two factors distinguished Nigeria from the then colonies mentioned. Firstly, as already explained, Britain had no defined policy of development in Nigeria. Secondly, the traditional dislike of intrusions into the Nigerian village communal life, especially in

¹ Ibid., p. 107.

² T.M. Yesufu, An Introduction to Industrial Relations in Nigeria, O.U.P. London, 1962, p. 7.

³ A. McPhee, op.cit., p. 27.

populated areas¹ would possible have created political and administrative problems. In the West Indies and British Guiana, on the other hand, the foundations of a labour force were laid by the slave trade. The land on which the immigrant labour settled belonged to private British businessmen² and local labour had no alternative but to engage in wage labour in plantations. Private recruitment of local labour for plantations in Southern Nigeria, would thus have entailed either the revision of British policy on compulsory labour, or the employment of immigrant labour adequately protected by law against possible violent opposition by local inhabitants. These measures would have resulted in administrative disorder. The experience gained from the private plantations

¹ Tribal settlement was, and still is, strongly associated with communal land. This in turn is bound up with the traditional system of family kinship, chieftainship, and religion.

The close-knit structure prevented even the admission of members of adjacent tribes for temporary or permanent settlement except through marriage. See F.E. Buckley "The Native Oil Palm Industry and Oil Palm Extension Work in Owerri and Calabar Provinces", paper read at the third West African Agricultural Conference held in Nigeria, June 1938, p. 208. The introduction of immigrant labour for employment on land which, in the first place would have been acquired against the wishes of the community, could, in the circumstances, only have been possible through the use of force.

² L.C.A. Knowles, The Economic Development of the British Overseas Empire, London 1924, p. 215. "British colonisation even in the Tropics had been an expansion of the English landed interest, and from the very earliest beginnings in the sixteenth century colonisation and plantation were synonymous terms."

established in Sierra Leone had shown that the difficulties involved in private labour recruitment were contributory factors to the failure of the plantations. This experience was in itself sufficient to discourage palm plantation development in Nigeria. The Nigerian government's main political policy of "leading the backward races, by their own efforts, and in their own way"¹ without major interference in the traditional way of life which might disrupt the achievement of the political objective, or its unwillingness to enforce the necessary changes, led to continuous opposition to any attempt at palm plantation development.

Government policy adopted

Government policy was to leave producers with the monopoly of oil palm production, which they had shown themselves qualified to produce satisfactorily within the limits of the known techniques. Official reports had certified that the farmers had an innate industrious ability to produce for export and that they were also interested in the care of their palms. The first Governor of Nigeria, Lord Lugard, commenting on the industrious nature of the people had said,

¹ Sir Frederick Lugard, The Dual Mandate in British Tropical Africa, London, 1922, p. 215.

"It has long been the fashion to speak of the African as naturally lazy, leaving work to his women, and contented to lie in the sun and eat and drink. It would seem, however, that there are few races which are more naturally industrious."¹

Also, in his Report on the Oil Palm Industry in British West Africa, F.M. Dyke pointed out that in Southern Nigeria "one cannot but be struck by the high degree of skill and knowledge shown by the native farmers in the care of their palms".² On the basis of this knowledge and of its recognition of the primitive methods of production as inefficient relative to mechanical production, the government initiated policy measures (involving no supervision) aimed at modifying village production methods and also quality control as a means of improving the quality and increasing the volume of export products.

A Committee was set up in 1923 to investigate and recommend means of securing increased production.³ Its recommendations in 1925 included the erection of crushing mills by private British businessmen, produce

1

Ibid., p. 400.

2

F.M. Dyke, Report on the Oil Palm Industry in British West Africa, Lagos 1927, p. 3.

3

Palm Oil and Palm Kernels: Report of a Committee appointed by the Secretary of State for the Colonies, September 1923, to consider the best means of securing improved and increased production, Colonial No. 10, (London, H.M.S.O., 1925).

inspection, encouragement of small-scale plantations owned and run by local farmers, improvement in the road net-work, and the re-organisation of the newly established Department of Agriculture to incorporate a research unit for investigating palm oil production methods. These recommendations which were accepted and implemented by the government can be classified into short-term and long-term measures aimed at improving the quality and increasing the export volume of palm products.

The first measure introduced was produce inspection. This measure originated from the loss of Nigerian export markets in palm oil, particularly markets outside Britain where Nigerian palm oil was found to be inferior to that of other exporting countries.¹ As a protection against further loss of export markets, for quality reasons, the Agricultural Ordinance was passed in 1926, "prohibiting the export of any agricultural produce

¹ For example, Nigerian exports of palm oil to the U.S.A. fell from 22,385 tons in 1923 to 14,447 tons in 1924 (see Table 2.14). In 1924 the first imports of palm oil by the U.S.A. were received from the Netherlands Indies. "Owing to its high quality the prime Sumatra oil has obtained the first place on the United States market. The oil of the Netherlands Indies in 1936 formed 75.8% of the total of the palm oil imports ... the United States have already signed contracts for the purchase of the bulk of the Sumatra output as well as for a considerable part of the 1938 output" International Institute of Agriculture: Oils and Fats: Production and International Trade, No. 4, Part 1, Rome 1939, p. 230. Nigerian exports of palm oil to the U.S.A. had dwindled from 22,385 tons in 1923 to 6,634 tons in 1938.

without such inspection and grading, and of any agricultural produce of inferior quality."¹ By August 1928 "produce inspection was in force over the whole of Southern Nigeria."² As a further emphasis on quality, two grades of palm oil were introduced according to the impurity content.

The Ordinance did not effect any change in the quality of palm oil exported; instead it was found that in the period 1928/30 "there was a serious deterioration in the quality of palm oil as producers and middlemen discovered they could market any quality as grade II".³ This anomaly arose from the fact that the ordinance did not introduce a price differential as a compensation for the production of grade I oil which entailed greater care in production. Since grade II oil was relatively easier to produce, and since the yield of oil by the grade II production method

¹ Laws of Nigeria 1948 (ed) Ordinance No. 4 of 1926, 18th March 1926, Vol. VII, pp. 84-86.

² E.M. Watson & A.H. Young "Produce Inspection in Nigeria", paper read at the Third West African Agricultural Conference, Lagos, June 1938, p. 1.

³ Ibid., p. 26.

was higher than that of grade I,¹ farmers were more interested in the quantity of marketable oil produced rather than in improved quality with no price differential.² An essential consequence of the greater concentration on the production of the low grade oil involving less time and labour was an increase in the tonnage of palm oil exported from 113,240 tons in 1927 to 135,801 tons in 1930.³ Further regulations were therefore introduced in 1931 giving "powers to prosecute any person re-offering any oil for export not of first quality ... and to

¹ Two methods of extraction were adopted in local production. One of the methods, known as the soft oil process produced higher quality oil but the total extractable oil from a given weight of fruit was 20% less than that of the alternative method - the hard oil process which involved producing low grade oil of grade II quality. See O.T. Faulkner & C.J. Lewis "Native Methods of Preparing Palm Oil" in Second Annual Bulletin of the Agricultural Department, Nigeria 1st July, 1923, p. 14. The implication of the two methods of production on tonnage exported is examined in detail in Chapter 6.

² Commenting on the lack of price differential as an incentive to producing high quality oil, the Director of Agriculture, Mr. O.T. Faulkner, said, "It is little use exhorting the natives to ... prepare a higher grade product, unless he gets a higher price for it ... and each time he gets a poor price for a product of good quality, or a good price for a product of poor quality, it is, to his ... view, evidence of the absence of any advantage to be gained by producing a higher grade." First Annual Bulletin of the Agricultural Department, Lagos, 1st July, 1922, p. 8.

³ See Table 2.12.

prosecute any person dealing with oil not of first quality."¹ By 1936 the enforcement of produce inspection had started to show favourable results in the quality of export palm oil. Reporting on his visit to Nigeria in 1936, Sir Frank Stockdale mentioned that "improvements in produce inspection and grading had proved beneficial to the producer, the exporter and the country."²

¹ E.M. Watson & A.H. Young, op.cit., p. 26.

² Report on a Visit to Nigeria, Gold Coast and Sierra Leone, Oct. 1935-Feb. 1936, C.A.C. 270, Colonial Office 1936, p. 9. It is doubtful whether the improvement in the quality of palm oil exported in the period 1930/36 was of much commercial benefit to the producer and the country. In the first instance, the ban on marketable palm oil in which there was no price differential between the accepted grade and the rejected grade must have constituted a loss to producers in money income and to the country in revenue. Because of (a) the substantial decline in producer prices during the depression years (see Table 2.10) and (b) the severe penalties for selling low grade oil, export production was discouraged and consequently a low tonnage of palm oil was exported, especially between 1930 and 1932. Quality control was therefore one reason why a low palm oil tonnage was exported in the period 1930/32.

Secondly, from 1931 when the Empire preferential tariff policy was introduced - see Chapter 2 - competition (among foreign manufacturers) for palm products was "so keen between consumers that some firms will always be found to buy any produce that is offered, regardless of its standard." Report of a Committee upon the system of Produce Inspection in Nigeria, Sessional Paper No. 1, 1932, p. 8. Therefore, the loss of income from such sales (which were discouraged because of quality control) was a loss to producers in money income and to the government in the form of foreign exchange earnings.

It is, however, conceivable that the banning of inferior grade oil enforceable by legal measures was a major factor contributing to the continuous decline in palm oil export tonnage from 135,801 tons in 1930 to 116,061 tons in 1932.¹ The imposition of legal penalties on farmers whose production methods depended on long-standing traditional processing methods, might have turned farmers from export production and even encouraged processing for internal consumption. These possibilities cannot be adequately verified as no records are available of farmers' economic activities, of different grades of oil exported, or of changes in internal consumption. However, the decline in palm oil export tonnage between 1930 and 1932 when the law was in force, and the added fact that palm kernel exports, which were not affected by the law, had increased from 260,022 tons in 1930 to 309,000 tons in 1932,² suggests that since palm oil and palm kernels were joint products³ the law did either promote increased local sales of palm oil at the expense of exports or discourage palm oil processing for export without encouraging local sales.

¹ See Table 2.12.

² See Table 2.12.

³ That is, in the Eastern Region. See Chapter 1, pp. 24-27.

A further recommendation of the 1923 Committee¹ which was accepted by the Nigerian government as a short-term measure to increase the quantity and improve the quality of palm oil, was the erection of mills by British businessmen. The mills were to be erected on selected sites after the offer of licenses on competitive terms and without monopoly rights. After the invitation had been extended to British merchants for five years, the Governor, Sir Graeme Thomson, announced in the Nigerian Council in 1930, that "No proposals have been received for the erection of mills ... and the Government is forced to the conclusion that in present conditions those commercial concerns that might undertake such an enterprise do not consider that it is at all a promising venture."² The merchants' reaction was not surprising in view of the adverse effect of the 1925 sterling over-valuation on the British crushing mills in the period 1925/30;³ the previous refusal to grant them land concessions for plantation establishment; the experience of local

¹ See p. 70, footnote 3.

² Address by the Governor, Sir Graeme Thomson, Nigerian Sessional Paper No. 1 of 1930, p. 9.

³ See Chapter 2, p. 48. Because of the timing of the invitation during the period when British crushing mills were either redundant or operating at reduced capacity as a result of the declining export of vegetable oil processed in Britain, it was unlikely that British manufacturers would either transfer their mills to Nigeria or set up new mills at such a distance from their European markets.

labour recruitment in Sierra Leone and the Gold Coast in 1912; and the Committee's recommendation not to offer a monopoly right to a single commercial firm. The attempt to induce British merchants' participation in processing was therefore abandoned.

As an additional measure to improve family production, a loan scheme, operated under the co-operative section of the Agricultural Department, and financed by the local government, was introduced in 1931.¹ These loans were for the purchase of hand-presses for palm oil processing. As shown in Table 3.1, the recorded number of hand-presses owned by producers increased from 58 in 1932 to 834 in 1938. The impact of hand-press extraction on the total tonnage of palm oil exported between 1932 and 1938 was, however, negligible. The estimated output of palm oil with hand-presses was less than 1% of the total palm oil exported in the period 1932/36; it amounted to only 2% by 1938. Indeed, it may be maintained that in the absence of a price/grade differential as an incentive to improved palm oil quality, the negligible quality improvement associated with hand-press processing in the period 1932/38, was an economic

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E.F.G. Haig, "Co-operative Development in Nigeria" in the Third West African Agricultural Conference, Lagos, Nigeria, June 1938, p. 351.

disadvantage to the farmers who invested in hand-presses.¹

¹ The economic disadvantage to the farmers who were induced to invest in hand-presses as an attempt to improve the quality of their oil because of the export ban on lower quality oil arises from the fact that the cost of their investment exceeded the increase in the commercially realisable value of their output. This is so because Nigerian palm oil was purchased locally and in Liverpool in the period 1922/38 on the contract level based on the 1922 quality of 18% free fatty acid content. (The free fatty acid content was the determinant of oil quality. A lower acid content indicated an improvement in quality.) When hand-press processing was introduced in 1932 a negligible additional payment of 1s. 9d. per ton for each 1% reduction of free fatty acid under the basic figure of 18% was made in the f.o.b. prices. See M. Perham (ed) op.cit., p. 229. The price per ton for the period 1922/38 is shown in Table Since producers sold their palm products to middlemen who in turn sold to the foreign merchants, the small rebate per ton on f.o.b. prices was collected by the Produce Inspection Department and did not benefit the producers. As the Department of Agriculture commented in 1938, "without a premium for quality the extra oil extracted by the press at present low prices barely covers working costs". Annual Report on the Agricultural Department for the year 1938, Sessional Paper No. 6 of 1940, Lagos 1940, p. 27. Hand-press producers therefore did not benefit either as a result of the increase in output or the improvement in quality.

Table 3.1

Estimated Palm Oil Output by Hand-Presses 1932/38

Year	No. of Hand-Presses (1)	Estimated Palm Oil Output Produced By Hand-Presses (tons) (2)	Total Quantity Exported (tons) (3)	Col 2 as % Col 3 (4)
1932	58	151	116,061	(a)
1933	76	198	128,696	(a)
1934	100	260	112,774	(a)
1935	180	468	142,628	(a)
1936	390	1,014	162,779	(a)
1937	734	1,908	145,718	1.4
1938	834	2,168	110,243	2.0

Sources and Notes

Column (1) Nigeria, Annual Report on the Agricultural Department for the year 1938, Lagos 1940, p. 27.

Column (2) See Note (b), below.

Column (3) Table 2.12.

Column (4) Percentage calculated.

Notes: (a) less than 1%.

(b) The Agricultural Department research unit gave the average daily output of a hand-press as 96 lbs of palm oil. In three months of twenty working days, estimated by the Agricultural Department as the length of time the machine is used within a year, an estimated 5,760 lbs or 2.6 tons of palm oil is produced per hand-press. This quantity - 2.6 tons - multiplied by the number of machines in use gives the output of palm oil produced with hand-presses for each year in the period 1932/38. See D. Manlove and W.A. Watson, "Press Extraction of Palm Oil in Nigeria", Tenth Annual Bulletin of the Agricultural Department, 1st August, 1931, p. 19. Cf. A.C. Barnes, "An Improved Process for the Extraction of Palm Oil by Natives, The 'Coker Press Process'" in Fifth Annual Bulletin of the Agricultural Department, 1st August, 1926, p. 33.

The major long-term policy adopted was an attempt to encourage farmers to introduce the cultivation of improved palm seedlings and the tending of wild palm trees. These measures were not to be adopted immediately as "no recommendation should be offered for general adoption unless the Department of Agriculture, after investigation, can show that it is likely to prove economically sound."¹ Besides the inevitable delay of awaiting research results, the government did not consider cultivation an urgent policy measure. This was partly because of the abundant wild palm groves, and partly because "the main objective in view was still an immediate increase in export trade"². In the government's view, "Problems connected with increased production of palm oil fruits are of less immediate importance to Nigeria, than those relating to the extraction of the products."³

¹ Nigeria: First Annual Bulletin of the Agricultural Department, 1st July, 1922, p. 5. The research work commenced in 1922 and lasted till 1931. For the reports on these research experiments see Annual Bulletins of the Agricultural Department, 1st July, 1922; 1st July, 1923; 1st August, 1926, and 1st August 1929 and 1931.

² O.T. Faulkner & J.R. Mackie, West African Agriculture, Cambridge, 1933, p. 3.

³ O.T. Faulkner, "The Aims and Objects of the Agricultural Department" in Nigeria, First Annual Bulletin of the Agricultural Department, 1st July, 1922, p. 16.

After four years of experiment on the methods of tending wild palm groves for improved palm fruit yield, the Department of Agriculture came to the conclusion that

"an attempt to demonstrate directly to Africans the benefit of clearing palms might well be to convince them that the process is not worth carrying out, for any benefit resulting will be of altogether too small an order for them to be able to appreciate."¹

Research into the improvement of palm fruit yields by tending was abandoned and effort was directed towards the classification of fruits according to yield and the breeding of the best variety for cultivation.²

1

O.T. Faulkner, "Measures for Increasing Production of Palm Fruit in Nigeria" in Fifth Annual Bulletin of the Agricultural Department, 1st August, 1926, p. 9.

2

Nigerian palm fruits were classified into three: the green-fruited type, the mantle type, and the ordinary type. The seedlings of the green-fruited type, which gave the highest yields per acre, were bred for distribution to cultivators. See E.H.G. Smith, "The Oil Palm at Calabar" in Eighth Annual Bulletin of the Agricultural Department, 1st August 1929, pp. 6-13. Cf. E.H.G. Smith, "Further Yields from the Calabar Plantation Oil Palms" in Tenth Annual Bulletin of the Agricultural Department, 1931, p. 1.

The experiments on cultivation were successful and cultivation by farmers began in 1928. Table 3.2 shows the number of farmers and the acreage cultivated in 1928/38. The progress in farmers' cultivation per se was encouraging, yet the estimated palm oil output from

Table 3.2

Cultivated Oil Palm Acreage and Number
of Cultivators, 1928/1938

Year	Acreage	No. of Cultivators
1928	21	6
1929	119	27
1930	236	53
1931	352	85
1932	691	218
1933	1,014	382
1934	1,457	704
1935	2,498	1,382
1936	4,172	2,278
1937	6,588	3,557
1938	8,730	4,667

Source: Annual Report on the Agricultural Department for the year 1938, p. 19.

the cultivated acreage (Table 3.3) represents a very insignificant quantity of palm oil exported.¹

Table 3.3

Estimated Palm Oil Output from
Smallholders' Plantations 1932/1938

Year	Acres (1)	Estimated Output (tons) (2)
1932	21	2.5
1933	119	12.8
1934	236	25.3
1935	352	37.7
1936	691	74.0
1937	1,014	108.6
1938	1,457	156.5

Source: Column (1) - Table 3.2.
Column (2) - Calculated. See Table 3.1, note (b).

The government's measures to increase palm oil output through cultivation methods did not therefore result in any significant change in the quantity of oil processed for export as compared with that from wild groves.

¹ In estimating the output from cultivated acreage, the FAO figure of output from E. Nigerian smallholders' plantations of 240 lbs an acre is used. The gestation period of four years is also derived from FAO sources. See Agricultural Development in Nigeria 1965-1980, Rome, 1966, p. 131.

Since planting started in 1928, it is assumed that with the gestation period of four years, the first production on 1928 planting would commence in 1932. It is also assumed that the cultivated acreage was sufficiently attended to and completely harvested.

Since the government's short-term and long-term measures did not result in any substantial increases in export production between 1906 and 1938, what accounted for the rise in export volume? Two exogenous factors induced the increase. These were the improved maintenance of law and order, and the improvement in communications. Margery Perham noted that

"the Agricultural Department would not claim the credit for the production (of palm products) which has been mainly due to the enterprise, at first almost unguided, of the Nigerian farmer who has taken quick advantage of the opportunity provided by orderly government."¹

The improvement in the maintenance of law and order was advantageous to both the merchants and the palm products producers. Whereas before 1906, trade in palm products was restricted to coastal areas and river banks,² it became increasingly possible after 1906 to establish purchasing depots inland. Inland producers

¹ Margery Perham, Native Administration in Nigeria, O.U.P., London, 1937, p. 290.

² Professor K.O. Dike commented that in 1885, "In the Niger Delta the merchants made their ships their home ... and they had no foothold on African territory." Trade and Politics in the Niger Delta, Oxford, 1956, p. 9. Cf. J.H.J. Farquhar, The Oil Palm and Its Varieties, ed. H.N. Thompson, Crown Agent, London 1913, p. 40. All purchasing depots around Lagos and the rest of Southern Nigeria were in towns situated on river banks. The rivers mostly used were the Ogun, Anambra, Orashi, Oguta, Calabar, Imo, Sombreio, and the Niger.

were able to market their products further from their villages without fear of molestation by neighbouring tribes.

A second important factor contributing to increased production was the improvement in road and rail communications. Transportation of palm products to sea ports by river was seasonal as "oil can only be exported at the height of the rainy season when the rivers are full enough of water."¹ The opening of the Eastern Railway line in 1910 assisted the speedy evacuation of palm products from the hinterland to the sea port. In 1926 for example, a record volume of 82,566 tons of palm kernels and 35,919 tons of palm oil were evacuated by rail.² This represents 33.2% and 31.7% of total palm kernels and palm oil exported. The length of motor roads, which up until 1915 had not exceeded 2,000 miles in Southern Nigeria, had by 1924 increased to 6,400 miles. These roads, which were excellently maintained were also increasingly used for the evacuation of produce from the inland areas to the coast.³

¹ Ibid., p. 41.

² Address delivered by His Excellency the Governor, Sir Graeme Thomson, at the Fifth Session of the Legislative Council of Nigeria, Lagos, 1st Feb. 1927, p. 119.

³ Ibid., p. 126.

An important aspect of the road network, to both merchants and producers, was the establishment, by merchants, of purchasing depots along inland roads. Since the quantity of products purchased depended upon easy conveyance from the purchase point to the sea ports, the availability of motor roads encouraged increased purchases. The extension of purchasing depots inland consequent upon improvements in road and rail services in turn encouraged increased production and an extension of the harvesting areas. The increase in the level of palm oil exported from 99,439 tons in 1923 to between 110,243 tons and 162,779 tons in the period 1924/38 and that of palm kernel from 223,172 tons in 1923 to between 246,537 tons and 386,143 tons in 1924/38 - see Table 2.12 - when the f.o.b. prices were declining following the adverse effect of the depression, is indicative of the greater use of both road and rail in the evacuation of palm products, and the improved contact between local sellers and foreign merchants promoted by infrastructure development.

The significant results of the improvement in rail and road communications, their increased use for products movement, and the effective administrative control as opposed to the insignificant results of minor changes in the production system were factors which largely accounted for increases in export production in the period 1906/1938. The spread of buying depots

from the coastal regions as a consequence of road and rail links with the coast induced greater production for export sales and an expansion in harvesting zones from the coastal fringes to the hinterland. Administrative and political control ensured a regular export flow of products from villages. More farmers who would otherwise have produced for local consumption for lack of contact with buying agents were increasingly provided with opportunity for export sales. The average yearly export production figure for palm oil which had been less than 90,000 tons between 1906 and 1923 had by 1924 (when an increased number of roads were in use) reached a new level of over 100,000 tons (see Table 2.12), during years when the f.o.b. prices were lower than the pre-1924 ones (see Table 2.10).

Effect of Policy on the Export Supply Trend

The increases in production induced by improved administrative control and infrastructure development were, however, minor compared with those of other foreign countries who had adopted the plantation production system. The higher absolute increases in plantation output of palm oil compared with increases in output in Nigeria are illustrated in Table 3.4. Whereas for instance Nigerian export output increased from 127,000 tons in 1924 to 163,000 tons in 1936, that of the Netherlands East Indies' plantations increased

from 5,000 tons in 1924 to 170,000 tons in 1936.

Similar increases were recorded in the export production of British Malaya.

These differences in the rate of annual increase in export tonnage between Nigeria and the other producing countries mentioned arose from two factors. The first is the higher production levels of plantation palm products in the Far East as compared with that of Nigeria. The yield of plantation cultivated palm was higher than that of the Nigerian wild groves. For example, the Deli type palms cultivated in Sumatra yielded 2,165 lbs of oil per acre while the best Nigerian variety yielded 2,095 lbs. Experiments in Nigeria had confirmed that "the fruit of the Deli type yields approximately six per cent more oil ... than the fruit of the ordinary thick-shell Nigerian palm".¹ Furthermore, the mechanical process used in extraction in the plantations recovered more oil from the palm fruit. Experimental results show that "Palm fruit contains on an average 18% of palm oil, out of which 16.75% can be extracted by machinery ... The Mata Poe Estate in Sumatra averaged 16.4% of oil in dealing with 65 tons of fruit in a month."²

¹ E.H.G. Smith, "Further Yields from the Calabar Plantation Oil Palms" in the Tenth Annual Bulletin of the Agricultural Department, 1st August 1931, p. 13.

² O.T. Faulkner, "Palm Oil Central Factories: Their Commercial and Economic Possibilities" in the First Annual Bulletin of the Agricultural Department, 1st July, 1922, p. 21.

In Nigeria, on the other hand, "8 per cent is probably a fair rough estimate of the average amount of palm oil extracted from fruit by ordinary native methods, the actual figures usually lying between 6% and 10%".¹

A second factor which contributed to the differences in the rate of annual increase in export tonnage between the Nigerian palm oil and that of other major producing countries was the preference of overseas importers for the high quality oil from plantation production. For example, the United States of America, which was the second highest importer of Nigerian palm oil after world war I, had (because of the quality of the Netherlands palm oil) by 1924 signed a contract to purchase over 75% of the Netherlands export output.² As this contract arrangement was in operation till 1938, the U.S.A.'s imports of Nigerian palm oil declined from 22,385 tons in 1923 to only 6,634 tons in 1938. The comparative proportion of both yield and oil recovered from the fruit and the preference of importers for high grade plantation palm oil thus reflected in the higher rate of annual increases in export tonnage by countries adopting the plantation production system. The increase in the number of local Nigerian producers and thus export

¹ Ibid., p. 22.

² See p. 71, footnote 1.

tonnage - consequent upon infrastructure improvement and relative political stability - did not thus compensate for the higher recovery rate (about 50%), the higher quality oil, and the superior yield per acre of the plantation system. Increased plantation exports of high quality oil did not only exceed those of Nigeria in absolute terms but as already seen,¹ also contributed towards the loss of Nigerian overseas markets.

Summary

Increases in palm products export supply in the period 1906/38 were not induced, to any significant extent, by any of the direct measures adopted by government policies. The main innovation in processing and cultivation (the introduction of hand-presses and small-scale plantations) from 1928 resulted in a very negligible increase of total export tonnage of palm products.

The main factors which mitigated against increases in export production were the government's lack of development policy for the industry, and its greater concern with political stability as the foundation for future social and economic progress.

¹ See p. 71, footnote 1.

These factors - absence of a definite economic objective and interest in political stability - strongly influenced the government's attitude towards any major changes affecting resource use in the local economy. Attempts made by individual foreign private enterprises to establish plantations, were, as a consequence of the government's objective, rejected. The observed increases in local export production, based on established traditional methods, were associated with such factors as political stability and infrastructure development. The increases were, however, slight compared with those from other producing countries in the Far East where technically superior production methods were adopted. The government's policy towards the industry therefore resulted in a comparatively low rate of increase in export production and the loss of export markets to other producing areas. ✓

Chapter 4

Responses to Economic Incentives in Production and Trade in Palm Products 1906-1938

The present chapter examines the main incentives (to producers and middlemen) to produce and sell palm products for export. It is argued that production motivation was associated more with internal obligations arising from the social and economic institutions of the producing area than with producer price. These obligations include the payment of taxes, debts, local dues and the purchase of foodstuffs in palm products. Like production motivation, the middlemen's incentive (on export sales) was also related to factors other than the f.o.b. prices, e.g. the expected trading profit from their combined trade in palm products and imported merchandise. The response of producers and middlemen to economic incentives in production and trade is therefore not considered solely in terms of price in this analysis. The analysis is preceded by a brief background description of the system of palm products export supply.

The Export Supply System

Export supply of palm products to foreign merchants in 1906/38 involved two economic processes - production and trade. Production was by farmers who

sold their products to traders¹ (usually known as middlemen) who in turn sold them directly to foreign merchants. This division of labour arose because "oil trading was regarded as a specialised and risky business, in which only those who can afford to lose money will engage on any scale."² In addition to the specialization caused by the financial risks and specialized knowledge required in the trade, the division of labour was also advantageous to producers in reducing the time and easing the burden of transporting the products to depots. These latter functions were performed by the middlemen. The ability to invest in trading, which most farmers could not afford, and the risks caused by fluctuating prices were among the factors which created a distinction in activity between farmers and middlemen.

¹ The distinction between producers and traders in the oil palm industry originated from the early system of palm products purchase by foreign merchants. Prior to the 20th century, foreign merchants established a system of purchase by advance payments known as "trusts" to reputable local coastal chiefs and known members of the community for the forward purchase of palm products before the arrival of their ships. The system saved the merchants time and trouble in the purchase of small quantities of products from farmers. For a detailed description of the "trusts" system see K.O. Dike, Trade and Politics in the Niger Delta 1830-1885, Oxford, 1956, p. 102. With increased administrative control in the 20th century, the purchase of small quantities of palm products for sale to foreign merchants was undertaken by specialised traders known as middlemen.

² D. Forde, "Native Economies" in M. Perham (ed.), The Native Economies of Nigeria, London 1946, p. 54.

A significant aspect of this is that the f.o.b. price per ton of palm products was known only by the middlemen who sold directly to the merchants. The fraction of the local trade price ultimately paid to the producers was privately arranged between producers and the local middlemen. A government report on the middlemen's trade in palm products shows that the proportion of the f.o.b. prices paid to farmers was generally low.¹ The middlemen may thus have prevented f.o.b. prices from acting as a signal to producers.

The inability of both trading companies and government to distinguish between the f.o.b. prices as an incentive to the middlemen to buy from producers and to sell to merchants, and the incentive provided by that fraction of the f.o.b. price paid to farmers by middlemen, has in the past led to confusion in the explanation of producers' responsiveness to production incentive and of the apparently low supply elasticity of primary products exports in West Africa before World War II. For example, both trading companies and government held the view that

"in West Africa a higher price for palm oil actually reduced the output on the grounds that the African producer finds that he does

¹ The Annual Report on the Southern Provinces of Nigeria for the year 1937, Lagos 1938, emphasised that "the middlemen ... bought at the usually low negotiated prices from farmers", p. 10.

not have to work as hard, at the higher price level to obtain the same quantity of imported goods."¹

This statement does not only fail to distinguish between the producers and the middlemen, but also implies that the only incentive to production was the purchase of imported goods by producers. In this analysis the responsiveness of the middlemen to price incentive will be examined separately from that of the producers, as will other influences on the supply elasticity of export palm products on both groups.

The Responsiveness of Middlemen to Price Incentive

Price elasticity of supply can be measured by statistical regression of product quantity to price. This method has not been adopted for two reasons. Firstly, although the output series was available for the whole country for the period 1906/38, the only available f.o.b. price series for the period 1906/30 was that for palm products exported from Bonny - one of the four ports of palm products shipment from

¹ The United Africa Company Ltd., Statistical and Economic Review, No. 1, March 1948, pp. 19-20. Cf. Report of the Mission appointed to enquire into the production and transport of Vegetable Oils and Oil Seeds produced in the West African Colonies (London, H.M.S.O., 1947) p. 25. The report stressed the point that "the average farmer only works to cover his immediate needs, and that ... an increase in the prices of oil seeds might well result in a fall of production."

Nigeria.¹ Secondly, for the few years 1931-1938 for which prices are available for all the ports,² the exceptional world depression makes this sample a biased one. The analysis is further limited to selected periods for which relevant data are available and does not cover the entire period 1906/38.

The use of local currency was characteristic of early trade in palm products. From the early inception of the trade in palm products until the early 1930's, British or West African currencies were rarely accepted as payment for palm products. As J. Farquhar, the Southern Nigerian Conservator of Forest, remarked in 1912,

"The native ... intensely dislikes silver that bears the effigy of the late Queen Victoria, as well as those of our late King ... It is only a native fear that the money of a dead person may sometime be dishonoured, but this fear is nevertheless so apparent that in many places the late Queen's silver is of little or no purchasing value ... The subject of native currency, especially of brass rods and manillas needs consideration,

¹ No separate output series was available for the Bonny export.

² In the period 1931/38 price movements at the ports were very different. This was mainly due to the zonal distribution and control of separate buying areas and ports by European merchants of different nationalities. See Chapter 1, p. 29.

This zonal monopsony involving differences in price movement was effective because of road communication difficulties between the four European trading zones. Communication thus restricted middlemen to one trading zone and also deprived them of the knowledge of prices in other zones.

as there is a certain stillness and deadness in trade in palm oil and kernels in many places that is entirely due to the want of a recognised medium of monetary exchange." ¹

This strong preference for local currencies (as opposed to the West African currency - sterling) as a medium of exchange in palm products trade must be taken into account in any examination of monetary prices as an incentive to export sales. The effect of this preference can be seen by relating the tonnage of exported palm products to the exchange rate of the two currencies. Between 1931 and 1938² (the only period for which figures of the exchange rates of the two currencies are available), the circulation of the West African currency (sterling) was increased, and both currencies circulated side by side within the local economy. A comparison of changes in the exchange rate of the two currencies with changes in the tonnage of palm products exported in 1931/38 thus gives some indication of the middlemen's responsiveness to monetary incentive in the palm products trade.

¹ J.H.J. Farquhar, The Oil Palm and Its Varieties, Crown Agent, London 1913, pp. 39-40.

² This period - 1931/38 - was one of expanding British imports of Nigerian palm products as a result of the Empire preferential tariff on imports of vegetable oils from Empire countries. See Chapter 2.

Table 4.1

The Quantity of Palm Oil Exported,
the estimated exchange rate, and the U.A.C. (f.o.b.)
prices of palm oil in Manillas 1931-1938

Year	Quantity Exported (tons)	Estimated Producer Manilla Price	Sterling Price	Estimated av. no. of Manillas to £	Index of Manilla Exchange Rate 1932=100
	(1)	(2)	(3)	(4)	(5)
1931	118,133	1,610	10.28	157	103
1932	116,061	1,590	10.39	153	100
1933	128,696	1,236	7.68	161	105
1934	112,773	762	5.08	150	98
1935	142,623	1,970	12.09	163	107
1936	162,779	1,841	11.09	166	108
1937	145,718	1,880	15.82	119	78
1938	110,243	790	7.1	111	73

Sources and Notes:

Column (1) Table 2.12.

Columns (2) & (3) Calculated from the U.A.C. Ltd. Statistical and Economic Review, No. 3, March 1949, pp. 47 & 48.

Column (4) Column (2) divided by Column (3).

Column (5) Calculated from Column (4) with 1932 as base year.

Notes: (i) In Column (2) the manilla price was for 224 lb. of palm oil. This is converted to a ton equivalent of 2240 lbs.

(ii) In Column (3), the U.A.C. Sterling prices are prices given for the best grade oil (see footnote 1, this page).

Table 4.1 shows the U.A.C. Ltd. local palm oil prices¹ in manillas, manilla exchange rates, index of

¹ The U.A.C. prices used in the Statistical and Economic Review differ from the average yearly f.o.b. prices used in my previous analysis as they are the prices for the best grade of oil shipped from Bonny, and not the average f.o.b. price for all grades of Nigerian palm oil.

manilla exchange rate, and the quantity of palm oil exported in the period 1931/38. For seven of the eight years, the index of exchange rate (with 1932 as base year) between the pound and manilla varied directly with the quantity of palm oil exported. Thus when sterling was devalued in terms of local currency, the favourable exchange rate became an inducement to increased sales. Since the manilla was the most important currency used in the oil producing area,¹ the direct relationship between the quantity exported and the index of exchange is consistent with a positive responsiveness to monetary incentive.

A second indicator of the middleman's responsiveness to price, frequently mentioned by trading companies in support of their view that the Nigerian was unresponsive to price incentives, was in the terms of trade of palm products prices relative to those of imported merchandise. The trading companies' views, as expressed by The United Africa Company were that "if higher price for palm oil causes a parallel but not necessarily equal rise in the price of imports ... the

¹ For different types of currencies used and their local area see G.I. Jones, "Native and Trade Currencies in Southern Nigeria during the 18th and 19th Century" in Africa, Vol. XXVIII, No. 1, Jan. 1958, pp. 354-358.

producer¹ of palm oil will be unwilling to buy imported goods at the higher price and will not therefore seek to increase his income."² This assumption necessitates an examination of the terms of trade of palm products' prices in relation to those of imported merchandise. As a background to understanding the relevance of the terms of trade as an incentive, a brief description of the function of the middlemen is first given.

The middlemen performed two major functions. Firstly, they purchased palm products from the farmers for sale to foreign merchants. And secondly, they bought imported goods from foreign merchants for sale within the producing areas. The details of the combined trade, as described by the United Africa Company, was as follows:

"An African middleman, let us suppose, sold a quantity of palm oil to the Company's manager on the wharf, for which he was paid in money of the West African Currency Board. The middleman then went to the Company's stores and used some of this money for the purchase of

¹ The "producer" in the statement refers to middlemen, as it was the middlemen's buying behaviour at the Company's stores that reflected their willingness or unwillingness to buy imported goods. The mistaken use of the word "producer" for middleman arises from the trading company's lack of distinction between producers and middlemen.

² The United Africa Company Ltd., op.cit., March 1948, p. 20.

trade goods, which he intended to carry back to his district for sale. With the remainder of his money he then approached one of the manilla dealers, and bought manillas from him at the current rate. He then had manillas, and also goods which he could sell in the oil producing districts ... with his total supply of manillas, he then purchased more palm oil, which he brought to the Company's wharf."¹

The two functions therefore render the barter terms of trade of palm products prices relative to those of imported merchandise an important measure of the middleman's responsiveness to price incentive.

It is difficult to evaluate with complete accuracy the terms of trade of the middlemen with respect to imported merchandise because of a lack of precise statistical data. Firstly, only crude weighting of the various imported commodities purchased have been recorded. The second difficulty is the absence of data on the prices of merchandise sold to the middlemen. These problems allow for only a crude index of the terms of trade by using (a) the index of landed price² of

¹ The United Africa Company Ltd., "The Manilla Problem" in Statistical and Economic Review, No. 3, March 1949, p. 46.

² Landed price is the c.i.f. price of merchandise plus import duty.

selected imported merchandise¹ and (b) the f.o.b. prices for palm oil and palm kernels.

The indices of export tonnage, f.o.b. prices for palm products, landed price of merchandise, and the terms of trade for palm oil and palm kernels (with 1930 as the base year) are shown in Tables 4.2 and 4.3.

1

Import merchandise and the weight used in this analysis are those of the United Africa Company Ltd., a well-known firm which had traded in palm products since the turn of the century. Their experience in the selection of twenty-seven commodities and the weight used probably provides the best rough guide under the circumstances due to their familiarity with the palm products traders. The twenty-seven items selected can be grouped into the following sub-heads (with weights given in parenthesis): Textiles (472); Drink and Tobacco (221); Provisions (142); Hardware (82); Haberdashery (44); Building Materials (39). Individual items included such commodities as tobacco, gin, sugar, salt, soap, canned fish, tinned milk, flour, corned beef, buckets, enamelware, matchets, gunpowder, sewing thread, singlets, blankets, cement and iron sheets.

While the experience of the firm cannot be disputed, nevertheless the inclusion of such items as tinned milk, flour, and iron sheets suggests purchases made by urban traders and not palm products middlemen who were only involved in rural trade. This confirms that the figures used can only provide a crude though meaningful indication of the middlemen's terms of trade.

Table 4.2

Indices of Export Tonnage, f.o.b. Prices, Import
Prices, and the Terms of Trade for Palm Oil 1930-1938

1930 = 100

Year	Index of Palm Oil Export Tonnage (tons) (1)	Index of Palm Oil f.o.b. Prices (2)	Index of Import Goods Prices (3)	Terms of Trade Col 2 + Col 3 (4)
1930	100	100	100	100
1931	-87	61	89	-69
1932	-85	58	91	-64
1933	+95	38	84	-45
1934	-83	25	77	-32
1935	+105	59	78	+76
1936	+120	68	78	+87
1937	-107	74	83	+89
1938	-81	32	82	-59

Sources & Note:

Sources: Column (1) Calculated from Table 2.12.
 Column (2) Calculated from Table 2.10.
 Column (3) U.A.C. Ltd. Statistical and Economic
 Review, No. 1, March 1948, Table on
 p. 25, Col. 4.
 Column (4) Column (2) divided by Column (3).
 Note: Import prices refer to landed prices, i.e.
 c.i.f. prices plus duty on imports.

Table 4.2 is for palm oil. In first examining the price indices - imports and f.o.b. prices for the period 1931/38 - the relatively small range of variation in the landed price index of imports as compared with that of the f.o.b. prices, especially between 1934 and 1938 is very noticeable. Secondly, the improvements in 1935

and 1936 in both the f.o.b. price index and the index of the middlemen's terms of trade was accompanied by corresponding increases in the index of palm oil export tonnage. Thirdly, for the period 1931 to 1934 (when there was a continuous deterioration in both the f.o.b. price index and the middleman's terms of trade), there was a general decline in the export tonnage index.

Table 4.3

Indices of Export Tonnage, f.o.b. Prices, Import Prices, and the Terms of Trade of Palm Kernels 1930-1938

1930 = 100

Year	Index of Palm Kernel Export Tonnage (tons) (1)	Index of Palm Kernel f.o.b. Prices (2)	Index of Import Goods Prices (3)	Terms of Trade Col 2 + Col 3 (4)
1930	100	100	100	100
1931	-98	69	89	-78
1932	+119	72	91	+79
1933	-100	53	84	-63
1934	+111	39	77	-51
1935	+120	70	78	+90
1936	+149	95	78	+122
1937	-130	100	83	-120
1938	-120	60	82	-73

Sources: See Table 4.2.

Table 4.3 (for palm kernel) depicts almost the same pattern as for palm oil except for 1932 and 1934. In 1932 both the f.o.b. price index and the terms of trade showed some slight improvement which was also accompanied by a rise in the index of export tonnage. But in 1934,

when both the local price index and the middlemen's terms of trade were at their lowest, the export tonnage index was higher than in 1930, 1931, and 1933.

Inspection of Tables 4.2 and 4.3 shows that the terms of trade and the export tonnage tended to move together. Whether this relationship arose as a result of changes in export tonnage responding to changes in the terms of trade or of changes in export tonnage and changes in the terms of trade responding to world demand trends, the movement of the two series is consistent with rational behaviour¹ on the part of middlemen.

Another incentive which was regarded by the government and trading companies as ineffective in the trade was palm products f.o.b. price. Although isolated official reports for 1919/22 and 1937 show that the middlemen's behaviour in the supply of export palm products was consistent with a positive

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Rational behaviour as used in this chapter implies consistent maximisation of a well-ordered function - profit function.

responsiveness to price incentive for those years,¹ the general view was still that "a higher price for palm oil actually reduced the output".² This generally held view about producers' and middlemen's irrational attitudes to price changes is supported particularly during the low prices of the depression years when palm products export tonnage reached a new record level (see Table 2.12).

The main factor which accounted for the periodic increases in palm products sales was the middleman's gain in palm products in his monopsonistic practices with the producers. The purchase of palm products from farmers was, as a rule, by means of short term advances made by middlemen for specified quantities

¹ During the period of the imposition of export duty on palm kernels in 1919/22 - see Chapter 2 - the Colonial Report for Nigeria in 1920 explained that palm products traders have, because of the prevailing low local prices "ceased temporarily to buy, or have purchased only in small quantities so that the products of the oil palm have been mainly used for supplying local needs." Colonial Report, No. 1098, Nigeria, Report for 1920, London, H.M.S.O. 1921, p. 10.

Also in 1937 an official report on the speculative trade of the middlemen stated, "the middlemen have been perhaps the most hard hit by the declining prices for having bought at the usual low negotiated prices from farmers they held on for the anticipated rise that never materialised and were eventually compelled to sell at a considerable loss". Nigeria, Annual Report on the Southern Provinces of Nigeria for the year 1937, Sessional Paper, No. 32 of 1938, Lagos 1938, p. 10.

² See p. 95, footnote 1.

of palm products. These advances in local currencies or imported merchandise were repaid in palm products. Interest was also payable in palm products. If, for example, a producer was advanced a sum equivalent to a negotiated price for a ton of palm products, he repaid the middlemen in palm products plus an agreed interest.¹ In addition to interest, the producers also incurred an extra payment through the middlemen's ability to manipulate the weighing scale "in such a way that they obtain an extra 14 lb in every hundredweight, and sometimes even as much as 28 lb."² The middleman's profit margin at periods of relatively high f.o.b. prices was thus so great that even steady or declining prices (within limits) did not suffice to limit his operations. His refusal to sell as observed by the government in 1937 - a year of very low prices - indicates that there was a discontinuity in his supply curve which occurred when his profits declined below a certain minimum level per unit sold. Thus the

¹ H.L. Ward Price observed that it was customary for the middleman "to enter into some arrangement with the farmers whereby they will sell their produce only to him". The relationship compelled "farmers ... to ask the middleman for loans which were repaid in produce for which the farmer added a quarter for which quarter he received nothing." Land Tenure in the Yoruba Province, Lagos 1939, pp. 76-77.

² K.D.S. Baldwin, The Marketing of Cocoa in Western Nigeria, O.U.P. London 1954, p. 31. Baldwin's work refers to the cocoa trade, but the principle adopted by the middlemen for all exported primary products was the same.

middlemen's large profit margin on their turnover, implied in their monopsonistic practices in conjunction with their methods of credit advances to producers, was the reason why export supply was sometimes insensitive to relatively low or moderately declining prices within a certain range of the export supply curve.¹

Producers' Responsiveness to Incentive

The analysis of the producers' responsiveness to incentive presents a problem because in the semi-monetized economy of the producing area up until 1938 money was not the only medium of exchange; thus money prices were not the sole incentive for production. Secondly, in the case of products purchased through monetary transactions, neither the price paid per ton, nor the quantity purchased are known. To obtain some idea of the responsiveness of producers to incentive measures requires the identification of those factors which were recognised in the economy as inducements to production and the producers' responsiveness to them.

In a subsistence economy based on the products of a single species of tree, which are consumed locally and also exported, inducements to produce may conveniently be broken down into three categories:

¹ For a theoretical analysis of the middleman's export supply curve, see Chapter 5.

those inducements arising from the need to fulfil internal consumption requirements; those associated with the demand for imported merchandise; and finally those connected with both administrative and local social obligations. Included in the third category are taxes, court fines, marriage and other ceremonies, and such communal activities as the erection of school and church buildings. Within these three categories none can be identified as requiring a complete monetary transaction. For example, palm oil produced for internal consumption was, at this period, mostly used for barter trade and rarely sold outside the producing villages.¹ Also imported goods sold by the middlemen to producers were either paid for in local currencies or in palm products. And most of the social and administrative obligations on producers were also payable in palm products², e.g. taxes, court fines and dues for

¹ Internal sales of palm products prior to the 1950's were in urban towns. Up until 1938 all the towns in Nigeria had a very small population compared with the post-war period. Also, the poor road system and long distances from palm belt villages to towns discouraged the development of such trade.

² There were "districts in which it is impracticable to enforce payments of Native Court fees or fines and taxes in cash" and it was "lawful for the person concerned to discharge his obligation by making payments in manillas, cloth, or other trade goods such as palm produce." Colonial Report No. 405, Southern Nigeria, Report for 1912 (London, H.M.S.O., 1913), p. 11. The main palm product used as payment in the discharge of the above social obligations was palm kernels because (a) palm kernels, unlike palm oil, did not require grading which necessitates additional labour and cost, (b) palm kernels do not deteriorate in quality as easily as palm oil.

communal projects. The farmers' inducements to produce will depend upon the relative incentives provided by some or all of these three categories.

Production inducements provided by the second and third categories, i.e. imports and social and administrative obligations may be regarded as target needs since they are as a rule satisfied once and for all within a specified period, e.g. the payment of taxes, dues and specified imports. Moreover, only the expenditure on imports involved any degree of monetary transaction. In order to establish the extent to which money played a role as an incentive to production, some knowledge of the extent to which producers' expenditure was devoted to demands associated with target needs is required. This point is also important because it was generally asserted that all the producers' earnings from palm products were spent on imported goods and that once this demand was satisfied a higher price for palm products would not induce increased output.¹

To estimate the degree of incentive to produce provided by target demands involving monetary transactions - imported goods - a budget study of producers' expenditure is needed. Such a comprehensive budget study embracing all the palm belt has

¹ See p. 95 , footnote 1.

never been conducted and the only available evidence is the budget study of two palm belt villages conducted by Anne Martin in 1955.¹ Assuming that her study accurately reflects producers' expenditure patterns and that these are representative of all the palm belt², the view that producers' expenditure was predominantly on imported goods involving monetary transactions is not supported by her figures. Her budget study shows that about 22% of the farmers' expenditure was on imports. From this she concluded that an "interesting feature of the expenditure patterns is the place of imports, considerably less than is often thought" and added "Much economic discussion in Nigeria is based on the false assumption that the greater part of the income from the sale of palm produce will be directly spent on imports from overseas."³ A. Martin went on to illustrate that most of the producers' expenditure was on food from the non-palm belt areas of Nigeria with fertile soil.

¹ The first budget study of palm producers' expenditure was by A. Martin in 1955. This was in two villages. Since the mode of life of the villages and their income have not altered significantly over the years, it is assumed that their expenditure pattern has also remained basically the same.

² The traditional social structure of the Eastern Nigerian palm belt is very homogeneous, as noted by A. Martin. Her budget study is therefore fairly representative of the entire palm belt. See A. Martin, The Oil Palm Economy of the Ibibio Farmer, Ibadan, 1956.

³ Ibid., p. 19.

Since A. Martin's budget study is for a more recent period when the local economy was more monetized than in the period 1906/38 and when improvement in communications and increase in imported goods would have encouraged greater expenditure on imports by producers, it may be reasoned that an even lower proportion of the producers' total expenditure¹, as compared with 1955, was spent on imports in the period 1906/38. If production was induced by imported goods which involved monetary transactions, it is unlikely that increases would have occurred in output once these targets had been fulfilled. Thus, as shown in Table 2.12, output reached a new high level from 1924 and this level was maintained throughout the depression when f.o.b. prices were generally low. Since imported goods, thought to be the major production inducement which involved monetary transactions, were not a substantial item in the producers' expenditure, it is unlikely that any slight fluctuation in the fraction of the f.o.b. prices paid to the producers by the middlemen could have provided adequate incentive for increased production. The fact that the

¹ Expenditure here refers to the expenditure involving the use of all forms of exchange media including palm products. In fact the proportion of the producers' money expenditure on imports would have been higher in the earlier than the later period.

negotiated prices between the middlemen and the producers were generally low and that the imported items on which most of the producers' money income was spent was not a substantial part of their budget expenditure¹ imply that the relevance of prices and of imported goods as an incentive to production was not great.

As the fulfilment of social and administrative obligations and the purchase of foodstuff did not involve monetary transactions, improvement in producer prices and thus in earnings from palm production was not the main determinant of increased export output. Most of the target obligations such as taxes could be fulfilled by payments in palm products and their value as currency was in itself an incentive to produce. An important example of the extent to which the value of palm products provided an incentive in production can be derived from the estimated tonnage of palm oil contributed as tax payments in 1931. An estimate based on 25% of the adult taxable population of 2,563,148² in the oil palm belt of Southern Nigeria in

¹ See p. 111, footnote 3.

² For a breakdown of the population census of Nigeria of 1931 into various districts and age groups see Colonial Report - Annual, Nigeria 1931 (Colonial No. 1569) (London, H.M.S.O.) 1932, pp. 10 and 11.

1931, and the flat rate tax of 7/6d per person¹ shows that an equivalent (in palm oil) of about 23,600 tons was collected in taxes. This tonnage is equal to 19.9% of the total palm oil tonnage exported in 1931.² The quantity of palm products communally contributed as payment towards the erection of school buildings, churches and village halls is difficult to estimate. Yet, in a subsistence community where these buildings are regarded as prestige projects, the volume of palm products contributed within a specified period would represent a significant proportion of the tonnage produced within a village.

Another production incentive arising from the value of palm products as a medium of exchange is in the purchase of food items. This incentive falls within the first category mentioned already, i.e. the need to fulfil internal consumption requirements. The importance of palm products in the purchase of foodstuff in the palm belt in the period 1906/38 arises from two factors. Firstly, the poor soil of the palm

¹ A flat rate tax of 7/6d was imposed on adult members of the rural community up until 1938. See The Nigerian Council, Address by the Governor, Sir Hugh Clifford, 20th Dec. 1920, p. 101.

² The estimated tonnage of palm oil represents what could have been paid if all the payment in palm product was with palm oil. A large quantity of products paid was, however, in palm kernels which is difficult to calculate because of the lack of information on the manilla price per ton of palm kernels.

belt described in Chapter 1 renders the region dependent on food imports from more fertile areas. Secondly, since the local currency (manilla) used in the palm belt was without a low denomination such as the penny or halfpenny, there was no convenient small exchange unit other than an assessment of the value of palm products in units of local measures equivalent to the local currency.¹ On the basis of A. Martin's evidence that food was the major item of expenditure in the palm belt, the use of palm products, especially palm kernels, as a medium of exchange in the purchase of food (in a region with declining soil fertility) more than any other item, provided one of the greatest incentives to production.

To sum up, producers' responsiveness to production incentives in the period 1906/38 may be best considered within the framework of the producers' demand and expenditure patterns within the local economy rather than in relation to products prices per se. Since the unknown producer's prices were "usually low" relative to the f.o.b. prices and since his monetary expenditure was not substantial, the incentive provided by monetary transactions alone was

¹ The value of palm products was assessed in units of local measures, such as cigarette tins (for palm kernels), and gin or beer bottles (for palm oil) equivalent to a unit of manilla, e.g. if ten cigarette tins of palm kernel were sold for one manilla and the price of ten oranges was one manilla, then the value of one cigarette tin of palm kernel was equivalent to the price of one orange.

not conducive to the sacrifice of his leisure hours for increased palm production for export. The incentives provided by obligations imposed by other internal social and economic factors and the need for the purchase of food were more important in inducing export production increases. Through the incentives provided by these means, an inestimable quantity of palm products entered into the export stream annually.¹

An essential question emerges from the present analysis of responses to economic incentive in production and trade in palm products in the period 1906/38. This is, did the producers and middlemen respond positively to incentive in export production and export trade in palm products? The crude evaluation made by relating increases in the export tonnage to periods of favourable manilla exchange rate, the rough assessment of the middlemen's attitude to the terms of trade of palm products' prices relative to those of imported merchandise and the incidence concerning the mode of operations in the trade are consistent with a positive responsiveness to price incentive. The absence of

¹ The palm products entered the export flow through two means. The first was through direct sales by the government to foreign merchants. The second was through purchases by the middlemen at periods when major social projects were embarked upon.

data on producer prices proper and export tonnage indirectly associated with monetary transactions by the producers presents some difficulties in assessing the producers' responsiveness to price incentive. The only indication of the producers' positive responsiveness to price is the qualitative evidence of a British firm in 1911.¹ However, non-monetary inducements, such as the fulfilment of tax obligations through palm products contribution and the rough estimate of the export tonnage subscribed show that non-monetary factors played an important role as incentive measures in production.

However, if we ask whether a positive responsiveness to economic incentives can be established by relating producers' prices (assuming they were known) to the actual tonnage of palm products exported, the answer is no. This is because only a part of the palm products produced by the farmers was associated with monetary transactions and therefore there was no direct relationship between the total quantity of palm oil and palm kernels exported and the producer prices for these products for the period 1906/38.

¹ In 1911 a British company that had established experimental palm kernel crushing mills at Opobo and Apapa, explained that farmers who sold palm fruits to the mills "knew when supplies at the mills were running low, held back supplies and put up their prices accordingly". The mills were closed in 1913 as a result of the unexpected price response by the producers and their continued unwillingness to sell at the Company's prices. See Charles Wilson, The History of Unilever, Vol. 1, Cassell & Co. London 1954, p. 182.

The view that palm products output was insensitive to f.o.b. prices changes was justified. But this does not substantiate views that the middlemen and producers were economically irrational. The available evidence from the budget study of producers casts doubts on the importance of imported goods as an incentive in the production of palm products.

The main difference between the government and commercial companies' view of producers' responses to incentive and that presented in this analysis arises from the former's implied assumption of the absence of market imperfections within the local institutional framework, and the inadequate consideration of institutional factors influencing production and trade in palm products. Price was thus mistakenly regarded as an appropriate signal to production before World War II. This assumption was invalid especially before

1938¹ and concealed the institutional aspects of producers' economic environment. It thus rendered the dependence on price in the evaluation of the producers' responsiveness inappropriate. In the next chapter an attempt is made to present a theoretical analysis illustrating the shape of the Nigerian palm products export supply curve for the period 1906/38 in the light of the observed problems arising from the institutional factors affecting the production and marketing of palm products.

¹ Studies by Professor P.T. Bauer and G.K. Helleiner which confirm the responsiveness of producers to price incentive in relation to palm products sold for export were for the period after 1949 when the Marketing Boards were established. Their work therefore implicitly shows that the functions of the Marketing Boards, e.g. in announcing fixed yearly producer prices, and the sales of produce for a generally accepted legal tender after the withdrawal of the manilla from circulation in 1949, adequately rectified the imperfections referred to above. See P.T. Bauer, "A Case Study of Response to Price in an Underdeveloped Country" in The Economic Journal, Vol. LXIX, No. 276, Dec. 1959, pp. 800-805; G.K. Helleiner, Peasant Agriculture, Government and Economic Growth in Nigeria, Richard D. Irwin Inc., Illinois 1966, pp. 58-66. Their studies demonstrated that in the absence of institutional imperfections, palm product producers in Nigeria responded positively to price incentives like their counterparts in Asia. For the responsiveness of Asian producers to price incentives see R. Krishna, "Farm Supply Response in India-Pakistan: A Case Study of the Punjab Region" in The Economic Journal, Vol. LXXIII, No. 291, Sept. 1963; S. Mashtag Hussain, "A Note on Farmer Response to Price in East Pakistan" in The Pakistan Development Review, Vol. IV, No. 1, Spring 1964, pp. 93-106; W.P. Falcon, "Farmer Response to Price in a Subsistence Economy: the case of West Pakistan" in American Economic Review, vol. LIV, No. 3, May 1964, pp. 580-591.

Summary

The analysis of the middlemen's and producers' responsiveness to incentive in export production and trade in palm products for the period 1906/38 cannot be successfully attempted by establishing a quantitative relationship between the tonnage produced and the f.o.b. price. In the short run the insensitivity of the output tonnage to price changes in palm products did not represent irrational economic behaviour by the middlemen. And in the long run changes in the quantity exported with respect to production incentive were due to a shift in the supply curve. This shift occurred because of such factors as improvement in communications and orderly government, the declining soil fertility which increased the purchase of foodstuff with palm products, and the expanding producer social and target obligations. These factors influenced the rise in target production which was reflected in the export output increases for the period 1906/38.

The lack of relationship between export tonnage and f.o.b. prices between 1906 and 1938 does not in itself establish economic irrationality in either production or trade. Rather, it shows that market imperfections and institutional hindrances inherent in a semi-monetized economy are conditions which may

influence the degree to which agricultural producers in underdeveloped economies respond to price incentive in the production of export crops. In particular, such imperfections and hindrances are likely to have the effect of preventing price from acting as a signal to producers.

Chapter 5

Influence of Market Forces on the Shape of Palm Products Export Supply Curve 1906/38

The present chapter summarises the descriptive analysis presented in Chapter 4 in a conceptual and theoretical form. Its main aim is to show that the production and marketing organisations involved in the Nigerian palm products export trade are determinants of the shape of the palm products export supply curve.

The main problems which arise in the analysis of the supply of palm products for export are market imperfections associated with production and sales organisation. An important example of such imperfections is the lack of information on producer prices. This, as shown in Chapter 4, was due to the role of local middlemen who had the only direct contact with foreign merchants in the marketing of palm products.

The middlemen's role in the supply of palm products to foreign merchants and their social status in the producing villages created conditions favourable

to the exercise of monopsony powers¹ in their demand for palm products in villages. Since the middlemen's prospective profit (the main determinant of the quantity of palm product they supply for export) in the palm products export trade was calculated as the

¹ Favourable conditions for monopsony gains by middlemen in the palm product trade during the period 1906/38 arose from the closely-knit village relationships in the producing areas. These relationships promoted conditions under which the more socially influential and wealthy middlemen had control over the purchases from their geographically and economically demarcated villages. The relatively self-contained nature of the villages created favourable conditions for market sharing (on village lines) by middlemen which restricted sellers to specific buyers and vice versa.

The powers utilized to maintain the monopsony position may be classified into three. The first is cultural power in the form of social relationships. This prevented the transfer of business customers due to intimate and overlapping social structures and relations. Thus the middlemen and producers within a village were linked in a way which prevented shifting allegiances on a price or gain basis. The second is economic power. This arose from the middleman's control over the major factor input in production - land. Because of their social status in the community they had a strong influence over the allocation of communal palm groves to export producers. Also, their ability to meet the financial and social needs of producers through advances, loans and personal help consolidated their claim on most producers. Thus the producers were obliged to maintain the goodwill of the middleman as an insurance for future loans in the event of an emergency. A third factor was informational and trade experience. The producers had a poor knowledge of sales and price alternatives due to their lack of experience in the trade as compared with that of middlemen. Also, poor communications prevented contact with places outside the producers' villages. These powers and the extent to which they were used by middlemen were not peculiar to primary production in Nigeria, but were and may still be characteristic of many underdeveloped countries. Cf. C.R. Wharton Jr. "Marketing, Merchandising, and Moneylending: A Note on Middleman Monopsony in Malaya" in The Malayan Economic Review, Vol. VII, No. 2, Oct. 1962, pp. 31-36.

difference between their total expenditure¹ on inputs and total receipts² at the export market, the magnitude of their monopsony gains at the village level enhanced their profit estimates at different levels of the f.o.b. prices.

The size of the middlemen's monopsony gains was influenced by two factors: namely, their monopsony powers³ and the shape of the producers' palm product supply curve. Before the latter factor is examined, it is necessary to explain palm product purchasing arrangements in the village market as these are relevant to the export producers' supply curve.

Export palm product demand by middlemen was mainly arranged by pre-season bulk contract order soon

¹ Total expenditure refers to pre-season expenditure on purchases, transport costs, and interest on borrowing (when applicable).

² Total receipts were calculated by multiplying the quantity of product purchased by the ruling f.o.b. price. The f.o.b. price per ton thus represented a convenient unit for calculating the middlemen's possible profit.

³ See footnote 1, p. 123.

after the end of the current season.¹ Two distinct contract systems were involved. The first was by advance payments by the middlemen to export producers in cash or kind for the supply of all processed products from the producers' groves during the new season. The expected yield and therefore quantity to be supplied from the groves was estimated by past experience of the tonnage of product from an individual producer's allocated acreage.² The second system of contract was that in which the producer, previously indebted to the middleman, surrendered the harvesting rights on his palm groves to the middleman for one of

¹ The middlemen's bulk contract order at the end of each season for supplies in the new season was an assurance of future supply. Furthermore, the quantity so demanded was an important determinant of the middlemen's possible volume of profit, bearing in mind the past level of the f.o.b. prices.

These contracts were, as a rule, arranged between the middlemen and the young and able-bodied members of the community - the 18 to 30 year age group. This was because of the climbing operation involved in the production process. This made the older members of the community unable to keep pace with export production requirements.

² Allowance was made for natural hazards such as the effect of weather on palm fruit yield.

the three harvesting periods during the season.¹ For the rest of the two periods a new contract similar to the first method was arranged.

The delivery of the products (by producers to middlemen within a season) was also subject to special arrangement. This arrangement entailed either the delivery of all the palm products processed in the three harvesting periods of a season (with a two months interval between each period), or the postponement of the contract obligation for one or two of the harvesting periods.² An important influence on the middleman's decision about delivery arrangements was

¹ The decision to enter into the transfer of harvesting rights was usually made by the village court of which the middleman was a member. The expected tonnage that could be produced in the acreage involved as equivalent to the debt was also decided by the court from previous experience of yield from the grove concerned. In some cases the producer was compelled by court decision to assist in harvesting during the season.

The middleman's decision to harvest some or all of the product during the season depended however upon the prevailing level of the f.o.b. price. If the f.o.b. prices were at a low level, he might allow some of the fruits to rot. On the other hand, if f.o.b. prices were high, he would harvest all the fruits. For a detailed description of the system see H.L. Ward Price, Land Tenure in the Yoruba Provinces, Government Printers, Lagos, 1939, esp. pp. 26-30.

² In the event of the postponement of delivery contract during a part of the season, the export producer was free to sell his products at the village market, provided he honoured his contract obligation at a later date.

the new season's f.o.b. price. For example, if the new f.o.b. price was, in the middleman's estimate, at a level which offered some prospect of a profit margin on total sales, he would accept a continuous delivery of the pre-determined tonnage produced by the export producers. On the other hand, if the f.o.b. price was relatively low, he would arrange with the producers to postpone part of the contract obligation involving one or two harvesting periods to a future date.

A second factor affecting the middleman's delivery arrangement arose from his lack of suitable storage facilities for the products. Palm oil deteriorates in quality in less than one month without adequate storage facilities. And, since the middlemen had no suitable storage facilities, palm oil had to be sold to foreign merchants within a few days of its delivery. Therefore, the postponement of part of the contract obligation (during periods of relatively low f.o.b. prices) was not only a convenient means of minimising losses in sales, but also one of avoiding additional losses from the deterioration of products.

In addition to the middleman's bulk contract purchase arrangements, the sale and purchase of palm products was also transacted in the village open markets. These open market sales and purchases were, however, largely associated with internal and

subsistence consumption and not with export sales. This difference arose because of the distinctive characteristics of the village open market which was not easily adaptable to the middleman's export demand arrangements. Two main features of the village open market operation contributed to its isolation from the export sales market. Firstly, the export contract involved bulk purchasing which was convenient and also implied lower purchasing cost to the middleman than purchases in small containers (of about a pint capacity) with no standardised capacity. Cigarette tins, beer bottles and home-grown calabashes were used in the village open market. The absence of a standard unit of measurement thus entailed long and time-wasting haggling over price. Secondly, palm products measured in these small containers were used as an exchange medium for the purchase of other domestically produced foodstuffs mostly from outside the palm belt. And, since the middleman's contract bulk purchases of palm products and his trade in imported merchandise was a full-time occupation all through the year, he had no time for haggling at the local markets and therefore did not trade in local foodstuffs. He thus excluded himself from village purchases which would entail payment in palm product. For these reasons, the middleman found it difficult to arrange palm product export purchases from the village open market. Consequently, only in exceptional cases, e.g. with

an abnormally high f.o.b. price, was the middleman induced to buy in small quantities from the village market. At such a time, the price he paid per container did not give a clear indication of rising f.o.b. prices to the export producers because of the absence of a uniform price per container and the haggling which was involved in price determination. Furthermore, even if the prices paid per container did give an indication of rising prices,¹ the export producer could not take advantage of the situation since he could not dishonour his long-standing contract as a result of a temporary local price rise.

An important economic aspect of the bulk contract arrangement, as it concerned the export producer, was that it gave him ready cash (or other form of payment) for immediate expenditure (or consumption).² His main concern during the season was therefore not the prevailing f.o.b. price per ton (of which he had no knowledge) but the fulfilment of his contract obligation in terms of total tonnage produced from his

¹ Without a standard weight and a uniform price per unit of measurement, the export producer could not reasonably convert the prevailing village price paid for, say, a calabash of oil, to the value of the tonnage of palm oil he was expected to deliver within a season to the middleman. He was therefore in a position in which the ruling local price had little influence upon his bulk contract pre-payment.

² Since the middlemen were also merchants, contract payment was also made in imported merchandise such as cotton piece goods.

groves. Since the contract tonnage was determined on the basis of past knowledge of the seasonal yield per producer's total land acreage - a function mainly of established production technique - and since the producer's main concern at the time of producing was not the current price, his output within the season on his total acreage varied within a narrow range each season.¹ Thus irrespective of any minor variations in his contract receipt per total seasonal output, the known yield and quantity from his total land acreage set a maximum capacity level to his total output. In other words, allowing for the postponement of contract order, the export producer operated at maximum production capacity each season. His supply arrangement (based on pre-paid price, maximum acreage harvesting, known production technique), and therefore exhibits marked price inelasticity of supply within seasons.

Problem of measuring Monopsony Gains²

The measurement of the middleman's monopsony gain in the village market constitutes the first problem in the final determination of the shape of the export

¹ The variation arises mainly from the effects of changes in weather on crop yield.

² For purposes of simplified theoretical presentation only one product - palm oil - is considered in the analysis below.

supply curve for palm products in the period 1906/38. This is because the larger the gain, the greater his prospect of profit after sales in the export market. This gain, as will be seen, affected his total receipts and volume of profit at different levels of the f.o.b. prices.

The middleman's total demand for the product in the new season was roughly indicated by his total pre-season expenditure on contract purchase. And, his decision concerning the quantity of the product to be acquired during the new season was basically

determined by the previous season's f.o.b. price level¹ - the unit for calculating his expected receipt and profit. The magnitude of his gains, as is illustrated below, depends upon two factors.

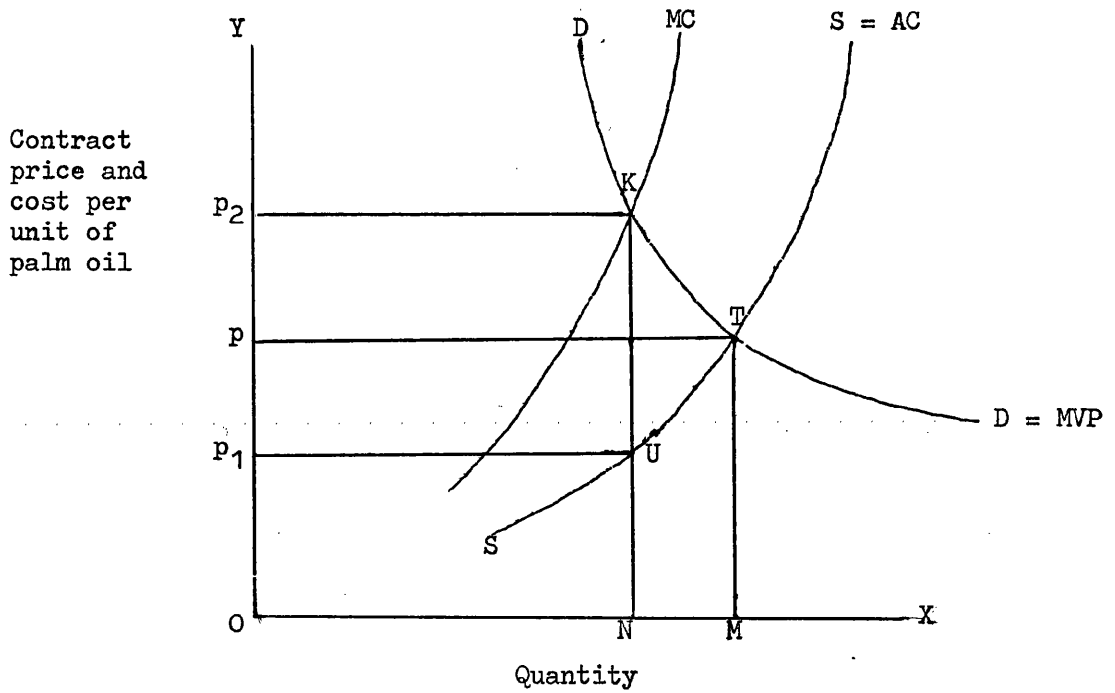
¹ The decision on the current quantity to be demanded being determined on the basis of the past f.o.b. price is a feature of primary product export supply in other African countries. See, for example, Kenneth D. Frederick "The Role of Market Forces and Planning in Uganda's Economic Development 1900-1938" in Eastern Africa Economic Review, Vol. 1, No. 1, June 1969, p. 55.

The main differences between the Nigerian palm product case and that of cotton production in Uganda are (i) the latter is an annual crop while the former is perennial, (ii) with cotton, the producer price is known to the farmers. Producer price at, say, period n thus acts as a signal for either increases or decreases in output and in land acreage devoted to cotton production at period $n + 1$. In the Nigerian case, the f.o.b. price at period n could not affect increases in output in period $n + 1$ because (a) output increases in villages were constrained by the known number of able-bodied men who were export producers; (b) all export producers had fixed harvesting acreage which could not be altered since they were communally allocated; (c) the constant technique of production provided limited scope for improvement in palm product yield.

The f.o.b. price at period n only influenced the middleman's anticipated demand for export supply in period $n + 1$ when the f.o.b. price at period n was relatively low, i.e. it could bring about reductions in output only or increases after a prior reduction from maximum capacity level. In the former case, the middleman was obliged to reduce the number of producers in his contract. On the other hand, at relatively high f.o.b. prices, he was unable to increase his contract beyond the limit set by the local labour, land and technique of production. Thus the influence of the f.o.b. price at period n to the middleman was only significant in regulating the demand for his export supply, and not in inducing production increases beyond the physical limit set by the available local factor inputs.

These are the shape of the producers' supply curve and his monopsony powers. It is argued below that the more inelastic the producers' supply curve for palm oil, the greater the magnitude of the middleman's gain; also, that the middleman's monopsony powers make it possible to translate his monopsony gain into monetary rewards. This theoretical concept is presented in a diagrammatic form in Figs. 1 and 2.

Fig. 1.



Starting from a condition of perfect competition¹ in the village market, DD represents the demand curve, i.e. competition between the middlemen is such that each can buy the quantity he chooses at each and every contract price for palm oil. And, with the middlemen considered as demanding a product for trade in which other cost items such as transport and administrative costs are considered, DD also represents his marginal-value product, i.e. marginal physical product multiplied by price. SS represents the supply curve. It shows the maximum quantity of palm oil which the middlemen can purchase at each and every contract price. The SS curve is therefore the average cost curve facing the middlemen. Thus, although SS may be the sum of the individual marginal cost curves of all the producers, for the middlemen it is the average cost curve for the product. Associated with this curve is the total cost curve for the product (from the middlemen's viewpoint) and also a marginal cost curve which shows the increase in total cost as additional units of the product are purchased.

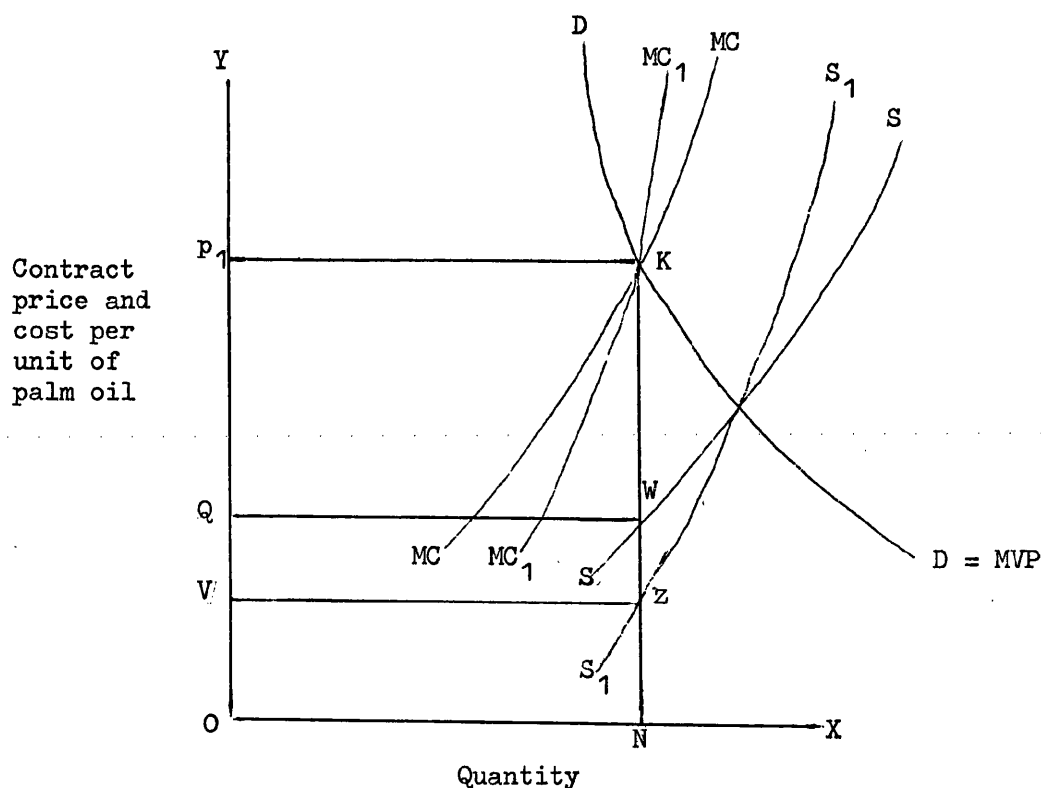
¹ Perfect competition as used here refers to the condition in which all producers sell in the export market where there is absence of restriction on the number of middlemen, absence of quality differential in product and no restriction on the condition of entry.

Under these perfectly competitive conditions, the middleman equates the cost per unit of the product SS with DD - the demand curve or marginal value product curve. The quantity of the product demanded is determined by the intersection of SS and DD, i.e. average cost and marginal value product. The competitive equilibrium is the point T, the contract price is Op , and quantity of the product purchased OM.

The middleman's market conduct as a monopsonist is, however, different. As the sole buyer of the product from his village, he equates his marginal cost with the marginal value product as opposed to the competitive case of equating average cost with marginal value product. In other words, the monopolist will arrange his contract purchases until the amount added to revenue by a unit increase in the product purchased is equal to the cost of that unit. In Fig. 1 this quantity is ON. On the other hand, the price the middleman will pay per unit purchased is determined at U, i.e. by the supply price of the quantity at ON as indicated by the curve SS. Thus the middleman's contract arrangement means that he purchases ON at Op_1 price instead of Op . His monopsony gain is therefore represented by the rectangle p_1UKp_2 . When compared with a competitive condition, the monopsonist reduces the quantity of the product that could have been bought from OM to ON and pays a price per unit which is less than the competitive price Op .

The second factor which determines the size of the monopsony gain is the shape of the producers' supply curve for palm oil. Fig. 2 shows that the more inelastic the supply curve for palm oil, the greater the magnitude of the middleman's gain. As in Fig. 1 (in which the supply curve SS and the corresponding MC were important in determining the size of the middleman's gain) the introduction of the more inelastic supply curve S_1S_1 and the corresponding

Fig. 2



marginal cost curve MC_1 in Fig. 2, indicates the extent of the monopsony gain $VZKp_1$. The same quantity of the product ON is purchased, yet the inelastic shape of the supply curve has increased the original monopsony gain from $QWKp_1$ to $VZKp_1$.

Although the producer's contract price was not known (a factor which does not permit a precise determination of the shape of the producers' supply curve), because of the known production technique, the pre-season contract payment before the needed product is produced, the association of contract quantity to producers' total land acreage, customary restriction on the frequency of harvesting, and the absence of alternative employment and sales possibilities by export contract producers, the shape of the producers' supply curve was more likely to be inelastic than elastic. Consequently, the size of the middleman's monopsony gains is more likely to be represented by $VZKp_1$ than by $QWKp_1$ as illustrated in Fig. 2.

The Shape of the Middleman's Export Supply Curve

The magnitude of the middleman's monopsony gains (at the village level) had an important influence on his export supply decision in the export wholesale market. As his total expenditure on purchases in the village market and the quantity of palm oil he expects

to purchase¹ were known roughly before the commencement of the new season, the new season's f.o.b. price per ton acted as an indicator of his expected receipt and profit. Furthermore, this new season's f.o.b. price level also influenced his sales decision. For instance, if the new season's f.o.b. price was at such a low level that offered little prospect for profit after sales, he either ceased to sell - as in 1937 - or sought an alternative home market (in towns) for part of his product. He would cease to sell by delaying delivery of his contract order arranged under the first system and also by allowing the fruits to rot in the case of the second contract system. If however some deliveries were made under the first contract system, he sold this quantity at a loss both

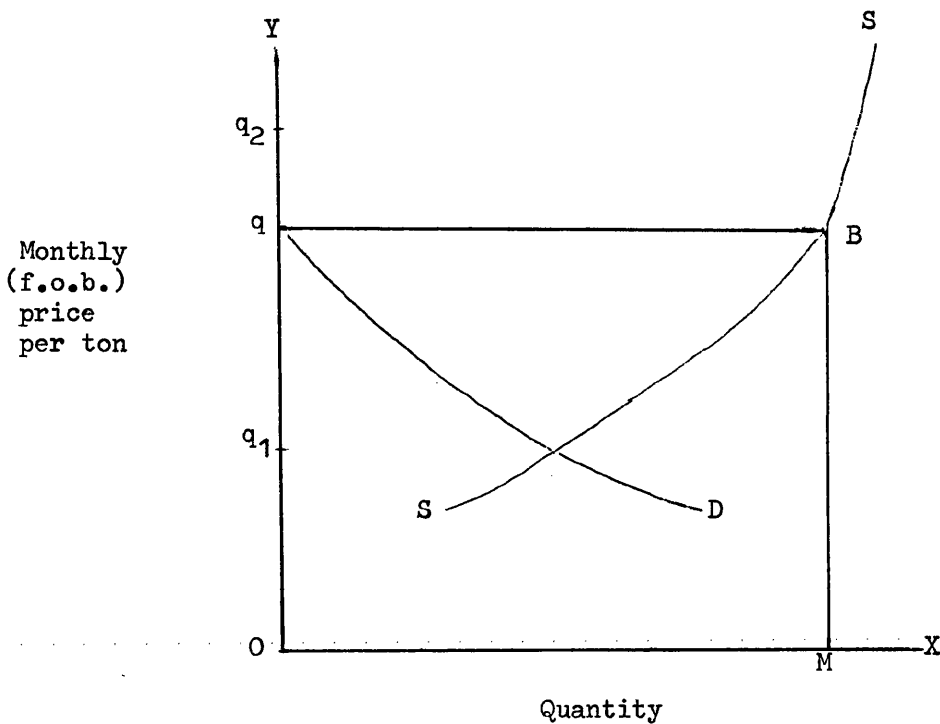
¹ For purposes of simplified presentation, the analysis in this section is based on the realistic case of one middleman purchasing palm oil from export producers in his village.

Secondly, it is a short-run analysis (involving one season - a year). The following variables are therefore held constant: (a) communal restriction on the frequency of harvesting, (b) technique of production, (c) harvesting acreage, (d) number of export producers. In the long run such factors as improvement in communications and orderly government contributed towards a shift in the supply curve through conditions which favoured additional supplies from remote areas previously not associated with export supplies. Since the four main variables affecting local production and the role of the middlemen in the trade did not alter significantly over the period 1906/38, long run increases in export supply can be envisaged as resulting from shifts in the S-curve, and therefore do not alter the shape of the supply curve in the analysis.

in the export market and locally in towns.¹ On the other hand, if the f.o.b. price was within a range that promised a comfortable profit on total sales, he would dispose of all his product in the export market.

Fig. 3 illustrates the shape of the middleman's export supply curve.

Fig. 3



¹ The middleman was in a position to adopt this procedure in sales because (a) through contract purchases he had a rough expectation of the quantity he had for sale, the f.o.b. price was known, therefore he could reasonably determine his profit; (b) he had an alternative means of earning income - selling imported goods; (c) he knew he could direct some sales to local markets in towns conveniently located. He was not therefore obliged to sell his product at any price to maintain his previous level of total income.

OM on the OX axis represents the total estimated quantity of palm oil purchased by the middleman (from the village market) on which he bases his calculation of expected profit. Since he is the sole purchaser, OM also represents the total quantity of palm oil produced for export sales in the village within the season. His decision on the quantity to sell at the export market or to hold for internal sales in towns depends on the f.o.b. price range shown on the OY axis. If the f.o.b. price is above Oq (the price level at which he expects some profit), he decides to sell all his stock. But at f.o.b. prices below Oq he holds part of the product for internal sales. qD represents his demand curve to hold and his export supply curve is represented by the horizontal distance between qD and MB. Since his demand curve to hold qD and that section of his supply curve SB are symmetrical between the verticals OY and MB, the supply curve SS is elastic within the f.o.b. price range Oq but inelastic above the Oq price range. Thus during the downward swing in f.o.b. prices, export supply is price responsive; on the other hand, an upward movement in f.o.b. price within the season does not call forth appreciable increases in quantity supplied or offered for sale. Why is this so?

Let us first consider the case of a downward swing in f.o.b. prices. From the familiar notion of producers in underdeveloped countries working for

target income (by offering their labour services or producing primary products for export sales)¹, it could be reasoned that in an economy with no alternative form of earning money income, a downward swing in price might in fact result in an increase in output. This phenomenon, it might be argued, is due to producers' willingness to sacrifice their leisure hours for work in an effort to maintain their previous level of total income in the face of reduction in product prices. This results in output increases at low prices and an inelastic supply curve.

The main flaw in this argument, from the Nigerian palm product supply example, arises from the production and marketing organisation leading to the supply of palm oil in the export market. As is shown in this analysis, producers' sales decisions, which might or might not have been similar to the target income notion, had no direct bearing upon the ultimate export supply curve. The middlemen who were directly involved in export supply, had

¹ See for example G. Dalton, "Traditional Production in Primitive African Economies" in The Quarterly Journal of Economics, Vol. 76, No. 3, 1962, pp. 373-374; M.J. Herskovits, The Human Factor in Changing Africa, New York, Knopf, 1962, p. 386; E.J. Berg, "Backward Sloping Labour Supply Functions in Dual Economies - the African Case" in The Quarterly Journal of Economics, Vol. 75, No. 3, 1961, pp. 491-492.

alternative sources of earning income,¹ powers to restrict the flow of palm oil from producers, and domestic market (consumers in towns) for internal sales at periods of downward swings in the f.o.b. prices. Their supply of export palm oil was therefore positively responsive to downward movements in f.o.b. prices.²

The middleman's supply during an upward movement in the f.o.b. prices within the season was limited mainly to his total pre-season contract purchases.³ As his pre-season purchase was limited by economic, social and technical constraints on village production,⁴

¹ As all middlemen traded in palm products and imported merchandise, they were in a position to recoup possible losses in one line of trade with gains in another. For details of the prevalence of such trading conduct in other countries, in Asia, see U.A. Aziz, "The Interdependent Development of Agricultura and Other Industries" Tenth International Conference of Agricultural Economists, Mysore, India 1958 (London: O.U.P. 1960), esp. p. 599.

² No statistical evidence exists relating to monthly sales in either the export or internal market to substantiate this point. However, government qualitative evidence in 1920 showed that because of the prevailing low f.o.b. prices during that season most of the "export products of the oil palm have been mainly used for supplying local needs" Colonial Report, No. 1098, Nigeria, Report for 1920, London H.M.S.O. 1921, p. 10. Cf. Annual Report on the Southern Provinces of Nigeria for the year 1937, Sessional Paper, No. 32 of 1938, Lagos 1938, p. 10.

³ The only additional sources of purchase open to the middleman were (a) retail purchases produced for subsistence consumption and barter trade in foodstuffs. Since the costs of such minor retail purchases might offset his profit prospects, he might only buy a limited quantity during periods of very high f.o.b. prices; (b) bulk purchases from periodical production associated with communal projects or other internal village social obligations. See Chapter 4.

⁴ See p.125 and footnote 1, p.125.

they could not be altered within the season. A near upper limit to his supply in the export market (when upward movement occurred in f.o.b. prices) was thus dictated by his pre-season purchases. However, at relatively very high levels of f.o.b. prices he was obliged to make minor additional purchases (at competitive prices) from the village subsistence market for additional sales in the export market. Upward movements in prices did not therefore call forth much increase in quantity supplied. This is shown by the highly inelastic upper half of his supply

curve BS in Fig. 3.¹

¹ The validity of the above analysis and the derived shape of the export supply curve rest on the main factors which influenced production and marketing of palm products in the period 1906/38. These include the role of the middlemen in the trade, their monopolistic powers, limited factor input (esp. groves acreage), and constant production technique. In the long run, a change in social norms, marketing organisation and such variables as land acreage, could result in the reversal of the shape of the supply curve as depicted. For instance, in his recent article, O. Aboyade inferred that in the production of primary export products in Nigeria, producers' "responsiveness operates more effectively upwards than downwards" - i.e. the upward half of the supply curve was elastic while the lower half was highly inelastic. This, he explained, is because with more recent production techniques involving capital expenditure on fixed and variable costs, the attempt to minimise capital losses in production during low export prices, encourages the maintenance of the level of production at reduced capacity. During an upward movement in price, production capacity is increasingly utilized and output is increased in line with upward movements in export prices.

Although the analysis is more relevant to plantation production as will be seen in Chapter 7 of this study, the idea is also applicable to small producers (with hand-presses and private palm groves) who could vary their input and output level in line with changes in market prices. This however assumes that the producers in recent years have no alternative occupation or vocation to pursue during periods of low prices and that institutional factors do not prevent prices from signalling market conditions to the producers. However, since the analysis in this chapter is for the period of the middleman's influence - 1906/38, it does not conflict with Prof. Aboyade's views on the shape of products export supply in recent years. See O. Aboyade, "The Economy of Nigeria" in P. Robson and D.A. Lury (eds), The Economies of Africa, London, George Allen & Unwin Ltd. 1969, p. 141.

Appraisal of Studies on Price Responsiveness
of Producers in Underdeveloped Countries

In recent years, a large amount of economic literature has appeared on the price responsiveness of primary product producers in underdeveloped countries. A few of these studies relate to pre-world war II,¹ while the majority are for the post-world war II period.² Although the choice of period and the main variables considered in both groups of studies differ, all try to measure or assess the influence of prices on primary product output or acreage cultivated. Early studies often fail to distinguish between the measurement of the influence of prices on primary product output and the influence of prices on primary products export supplies. These two areas of investigation, as shown by the present analysis of Nigerian palm product exports in the period 1906/38 are not necessarily synonymous. The Nigerian case for the period 1906/38 has shown that because of absence of data on such variables as producer

¹ See, for example, P. Ady "Trends in Cocoa Production" in Bulletin of the Oxford Institute of Statistics, Vol. ii, No. 12, 1949, pp. 389-404; K. Frederick, op.cit., pp. 47-59.

² See among others, M.J. Bateman, "Aggregate and Regional Supply Functions of Ghanaian Cocoa, 1946-1962" in Journal of Farm Economics, Vol. 47, No. 2, May 1965, pp. 384-401; R.M. Stern, "The Price Responsiveness of Primary Producers" in The Review of Economics and Statistics, Vol. 44, 1962, pp. 202-207; Edwin Dean, The Supply Responses of African Farmers, Theory and Measurement in Malawi, North-Holland Publishing Co., Amsterdam, 1966; cf. p. 119, footnote 1.

prices as well as the overwhelming influence of middlemen with monopsony powers over producer prices and output, assessment of the influence of prices on producers' total output amounts to an educated guess and must be taken with a pinch of salt. Therefore in underdeveloped economies where the middlemen are the main suppliers of primary products for export, correlations of the influence of price on output can be misleading, and so provide a wrong basis for future policy.

Summary

Imperfections in the production and marketing of Nigerian export palm products in the period 1906/38 had an important effect on the determination of the shape of the export supply curve. The monopsony powers of the middlemen, their control over the marketing of products and over the producers' land, the producers' ignorance of producer price, their allegiance to middlemen (their traditional creditors), together with the traditional regulations on land use and harvesting periods, all contributed towards hindering the producers' export supply but enhanced the middleman's prospect of gains in the purchasing and marketing of export products. Consequently, the export supply curve with a kink (as illustrated in Fig. 3) mainly reflects the direct effect of the middleman's expected profit level and f.o.b. price fluctuations on his supply

decision, rather than the direct effect of f.o.b. price fluctuations on producers' output. This difference, caused mainly by the role of the middlemen in the trade, presents quantitative problems in the choice of suitable variables (such as price and output figures) for determining producer price responsiveness.

Chapter 6

Post-War Policy and Export Production

1939-1954

In the period 1949/54¹, export production of palm oil and palm kernels increased at an average yearly rate of 14,038 tons and 20,026 tons respectively.² This represents an annual average increase of 7.6% and 5.8% for palm oil and palm kernels respectively over the period 1949/54. These average yearly increases differ from the 2.5% for palm oil and the 2.8% for palm kernels in the period 1906/38. This chapter examines the factors influencing these increases. It is argued that increases in overseas demand as well as improvements in government policies to promote production induced these increases. Increases in British import of Nigerian palm products arising from war-time shortages of vegetable oils from the enemy blockade of the alternative sources of palm product supply, as well as the introduction in Nigeria of new government price policies and an improved processing technique, had a favourable impact on export production. The improvement in processing methods and in the

¹ The emphasis in this chapter is on the period 1949/54. This is because up until 1948 no significant changes occurred in production and in the marketing organisation prevailing during the period 1906/38.

² The trend figures are calculated by using the least square method of estimating trend.

marketing organisation, as will be seen, revolutionised the pre-war pattern of palm products export production and laid the foundations for a second phase of export production consistent with the changes made.

British Imports of Nigerian Palm Products

Unlike the period 1906/38, British imports of Nigerian palm products cannot be shown by the import requirements in separate industries such as the soap or margarine industries, because when the war began Britain introduced emergency measures¹ to establish centralised purchasing of all primary export products from her West African colonies. Examination of the special purchasing arrangements made for palm products and the extent of British imports will illustrate how important those products were to Britain up to 1954.

The first indication of Britain's increases in import of Nigerian palm products during the war was in 1942, when the loss of the Far East - a major source of oilseeds supply in the world market - led to the incorporation of palm products, in the West African

¹ The emergency measures implied among other things such action as would (i) control the direction of raw material export flow; (ii) attempt to prevent the rise in British consumer prices of those items manufactured from raw materials imported from West Africa, e.g. soap, margarine; (iii) increase the degree of overall control over the West African economy which depended mostly on primary exports products; (iv) ensure external markets for West African primary products under conditions of military hostility.

Produce Control Board¹, under the jurisdiction of the Colonial Office. From 1942 until 1949 all palm products exported from Nigeria were purchased by the British Ministry of Food through the West African Produce Control Board.

After world war II, Britain responded to her urgent import requirement of palm products (as opposed to cocoa²) by delaying for two years their transfer from the West African Control Board to the Nigeria Oil Palm Produce Marketing Board. The reason given was that "control on these lines should continue whilst the present world shortage exists."³ Thus, to ensure a long-term continuous supply, the Nigerian

¹ The centralised purchase of West African primary products was initially confined to cocoa. Purchases were first arranged in 1940 by the West African Cocoa Control Board under the direction of the Colonial Office. In 1942, the Control Board was enlarged and renamed the West African Control Board to include the purchase of other primary products. See Report on Cocoa Control in West Africa 1939-1943 and Statement on Future Policy (Cmd. 6554, London, H.M.S.O. 1944), p. 3.

² Soon after the war, arrangements were made for the transfer of responsibility for cocoa control from the Colonial Office - West African Produce Control Board - to the respective West African colonial government Statutory Boards concerned. By 1947, these arrangements were completed and the Nigerian Cocoa Marketing Board came into being. But, the Nigeria Oil Palm Produce Marketing Board was not formed till 1949. See Nigeria, Oil Palm Produce Marketing Board, First Annual Report 1949, Lagos, 1950, p. 26.

³ Report of the Mission appointed to enquire into the production and transport of Vegetable Oils and Oil Seeds produced in the West African Colonies. (Colonial No. 211: London, H.M.S.O. 1947), p. 24.

Financial Secretary announced in his Statement of Policy proposed for the Future Marketing of Nigerian Oils, Oil Seeds and Cotton that "His Majesty's Government are prepared to agree to purchase the entire output of Nigerian Oilseeds for the next ten years".¹ In 1949, when the Nigeria Oil Palm Produce Marketing Board was ultimately created, the British Ministry of Food signed a contract with the new Board on 13th June, 1949, whereby "the total exportable surplus of Nigerian palm kernels and palm oil for the years 1950, 1951 and 1952"² were purchased by the British Ministry of Food. At the expiration of the contract, a new one, with basically the same terms, was signed in 1952 for the period 1952/55.³

Between 1939 and 1954, the average annual tonnage of Nigerian palm oil imported by Britain was

¹ Statement of Policy, No. 18, 1948, Lagos, p. 2.

² Nigeria Oil Palm Produce Marketing Board, First Annual Report 1949, Lagos 1950, p. 17.

³ Among the additional clauses in the new contract was one which stipulated that from 1953 the Ministry of Food was to discontinue the purchase of the total exportable surplus of Nigerian palm products. The 1952/55 contract had not completely run its course when in 1954 the Ministry of Food announced its intention of terminating the agreement on the grounds that "trade generally favoured a return to free market conditions". See Nigeria, Sixth Annual Report of the Nigeria Oil Palm Produce Marketing Board 1954, Lagos 1955, p. 10.

158,286 tons. This figure is 36.7% higher than her previous highest import of 100,874 tons in 1936. The average annual tonnage of palm kernels imported - 347,621 tons - was also a record. It exceeded the previous highest import figure of 209,177 tons in 1919 by 66.2%.¹

Objective of Government Policy Changes,
1949-1954

The major post-war innovation in the industry was the creation of a statutory board - the Nigeria Oil Palm Produce Marketing Board - in 1949. This Marketing Board, in collaboration with other newly formed government departments and Development Boards², was to be responsible for "the development improvement of marketing of products for exports",³

¹ See Table 6.1. Cf. Chapter 2, Tables 2.11 and 2.12 for British imports of Nigerian palm products before 1939.

² The new departments were the Department of Commerce and Industries (created in February 1946); the Department of Marketing and Exports (created on 1st September, 1948); and the Regional Production Development Board (5th April 1949). See Annual Report of the Commerce and Industries Dept. 1946/47, Sessional Paper No. 31 of 1947, Lagos 1947, p. 3; Annual Report of the Dept. of Marketing and Exports for the year 1948/49, Sessional Paper No. 12 of 1950, Lagos 1950, p. 3; First Annual Report of the Eastern Regional Production Development Board 1949/50, Enugu 1950, p. 2; Western Regional Production Development Board, Annual Report 1949/50, Ibadan 1950, p. 1.

³ Nigeria: A Ten-Year Plan of Development and Welfare for Nigeria, Lagos 1946, p. 5.

"price stabilisation, economic development and research".¹ The main objective of the Oil Palm Produce Marketing Board, as expressed by the government, was the accumulation of export profits for producer price stabilisation.² However, the actual operation of the Marketing Board's policy, as opposed to its primary intention, shows that price stabilisation was secondary to the accumulation of

¹ Nigeria Oil Palm Produce Marketing Board, First Annual Report 1949, Lagos 1950, p. 5.

² The initial official document on the establishment of the Oil Palm Produce Marketing Board - Statement of the Policy Proposed for the Future Marketing of Nigerian Oils, Oil Seeds and Cotton (Sessional Paper No. 18 of 1948) - considered "price stabilisation" rather than "development" as the main reason for the establishment of the Oil Palm Produce Marketing Board. It emphasised that "The need for some form of price stabilisation constitutes the main ... justification for the present proposals" *ibid.*, p. 19. When the Oil Palm Produce Marketing Board was established in 1949, the Nigeria Oil Palm Produce Marketing Board, First Annual Report 1949, Lagos 1950, p. 5, also explained that policy emphasis on price stabilisation was considered as the main objective of the Board because of the "benefit" that would accrue to the producers. With this objective in mind the Oil Palm Produce Marketing Board's formula at the inception of the scheme in 1949 was to allocate 70% of its "surplus funds" to "price stabilisation", 22½% to "development" and 7½% to research. *Ibid.*, p. 19.

savings for development purposes.¹ Soon after the war, "development" dominated British Colonial policy.² A "Ten-Year Plan for Development and Welfare for Nigeria" was published in 1946, and the Colonial Development Corporation and Overseas Food Corporation were established. The implementation of the former plan required the mobilisation of funds. Since the Nigerian economy depended mostly on primary products exports, the most effective way was the conscious development of these industries. The immediate objective of the Nigeria Oil Palm Produce Marketing Board - at the period of expanding demand - was therefore the development of the industry through investment by re-organising the

¹ For the period 1949-54, 54% of the surpluses accumulated by the Board was spent on development and only 46% on price stabilisation (see Table 6.9). Also, after 1950, development projects were guaranteed £800,000 of the Marketing Board's funds irrespective of whether the Board had trading profits or losses. No such guarantee was introduced for the price stabilisation scheme. When in 1953 and 1954 the Board incurred losses, producer prices fell by an average of 4.4% and 15.4% respectively over the 1952 prices, while development and research allocation was £1,281,086 (in 1953) and £887,889 (in 1954). See Tables 6.4 and 6.9. Cf. Sixth Annual Report of the Nigeria Oil Palm Produce Marketing Board, Lagos 1954, esp. pp. 15 & 16.

² Cf. W.K. Hancock, Wealth of Colonies (The Marshall Lectures), Cambridge, 1950, esp. pp. 56-72.

marketing framework,¹ processing, and, subsequently, cultivation. Increases in export production, consequent upon improvements in marketing organisation and processing would maximise the export earnings (net of foreign remittances) from the industry and thus create a source of funds for re-investment in the oil palm industry and also in the other sectors of the economy. The main objective of the Nigeria Oil Palm Marketing Board as well as other primary products Marketing Boards was thus the accumulation of funds for the development of the Nigerian economy.

Marketing Re-organisation

One of the three aspects of marketing which raised local sales of palm products was the re-organisation of purchasing arrangements. Unlike the pre-war period when palm products were purchased by middlemen and sold to foreign merchants, purchases were made by the Marketing Board through their licensed agents. The appointment of the licensed agents depended on the fulfilment of prescribed

¹ The initial importance attached to national capital accumulation for development can be envisaged from the fact that the statutory scheme was for "Marketing" not "Production" in the first instance. Unlike marketing, production would have required more capital investment especially in fixed assets, and a long gestation period before any profits could have accrued.

minimum entry requirements.¹ This centralised purchasing system² had important repercussions on palm products marketing. Firstly, the pre-war 1949 function of the middlemen as export suppliers of palm products was modified in a way that allowed for producers' acquaintance with producer prices. Their modified role was adequately accommodated within the new marketing system. The middlemen who satisfied the Marketing Board's entry requirements as licensed buying agents were absorbed into the marketing framework, while others were employed by foreign licensed buying agents for the purchase of products on a commission basis. Because of the Marketing Board's seasonal producer price announcements at

¹ The minimum financial entry requirement in respect of palm oil varied between £3,500 and £5,500 while that of palm kernels varied between £4,000 and £8,500. The minimum tonnage requirement to be purchased by each agent for palm oil and palm kernels was 275 tons and 875 tons respectively per annum. See Nigeria Oil Palm Produce Marketing Board, First Annual Report 1949, pp. 34-35.

In deciding on the minimum financial requirement, the Marketing Board took the following factors into consideration: (i) an Agent's ability to provide adequate storage facilities; (ii) Ability to acquire containers; (iii) Ability to provide transport for purchases from villages and also from the buying stations to the ultimate port of exit.

² Centralised purchasing was a continuation of the war-time scheme operated by the West African Produce Control Board. This system of purchase was not to be discontinued since that would not be "a practicable nor, in the opinion of the Government, a defensible proposition". Statement of Policy, No. 18, Lagos 1948, op.cit., p. 8.

village level, the establishment of buying depots in or near villages and, as will be seen, the competitive buying of products at the village level, the producers became familiar with product prices and also had a ready source of income which no longer tied them to those obligations which had subjected them to the monopsonistic powers of the middlemen. And, as will shortly be seen, the producers were motivated by these changes to respond positively to fluctuations in prices in the supply of their products.

The second modification in the re-organised marketing system was that involving the method of purchases by foreign merchants. The centralised purchasing system from 1949, altered the function of foreign merchants from that of private buyer to paid licensed buying agent of the Marketing Board. "Under the Agreement, the Board pays a hire charge on the capital assets involved and reimburses the agents in respect of actual operation costs as well as paying remuneration to cover profit and management services".¹

Table 6.2 shows the breakdown of the Marketing Board's buying agents according to nationality for the

¹ Sixth Annual Report of the Nigeria Oil Palm Produce Marketing Board; Lagos 1954, p. 12. In 1949, the Marketing Board's payment to licensed agents for services and profit was £3.75 per ton. See Nigeria Oil Palm Produce Marketing Board, First Annual Report 1949, Lagos 1950, p. 11.

Table 6.2
The Nigeria Oil Palm Produce Marketing Board Buying Agents
1949-1954

Year	PALM OIL				PALM KERNELS			
	Foreign (1)	Nigerian (2)	Total (3)	Col 2 as % Col 3 (4)	Foreign (1)	Nigerian (2)	Total (3)	Col 2 as % Col 3 (4)
1949	9	1	10	10.0	15	1	16	6.25
1950	11	6	17	35.5	21	13	34	38.2
1951	15	7	22	31.8	21	19	40	47.5
1952	13	11	24	45.8	22	20	42	47.6
1953	13	13	26	50.0	20	21	41	51.2
1954	12	18	30	60.0	21	29	50	58.0

Sources: Columns (1) & (2): Nigeria Oil Palm Produce Marketing Board, 1949, p. 9; 1950, pp. 4-5; 1951, pp. 5-6; 1952, pp. 5-7; 1953, pp. 6-8; 1954, pp. 6-7.
Column (3): Col (1) + Col (2).
Column (4): Percentage calculated.

Table 6.3
Estimated Minimum Tonnage of Palm
Products Purchased by Nigerian Buying Agents, 1949-1954

Year	PALM OIL			PALM KERNELS		
	Total Market- ing Board Purchase (tons) (1)	Estimated Quantity Purchased by Nigerians (tons) (2)	Col 2 as % Col 1 (3)	Total Market- ing Board Purchase (tons) (1)	Estimated Quantity Purchased by Nigerians (tons) (2)	Col 2 as % Col 1 (3)
1949	161,545	275	(a)	372,905	875	(a)
1950	167,124	1,650	(a)	380,929	11,375	3.0
1951	145,476	1,925	1.3	329,995	16,625	5.0
1952	190,316	3,025	1.6	412,777	17,500	4.2
1953	224,214	3,575	1.6	433,584	18,375	4.2
1954	216,587	4,950	2.3	464,940	25,375	5.5

Sources and Note

Column (1): See Table 6.1.
Column (2): Column (2), Table 6.2, multiplied by 275 tons (for palm oil) and 875 tons (for palm kernels)
Column (3): Percentage calculated.

Note: (a) Less than 1%.

period 1949-54. The number of Nigerian buying agents increased from 1 in 1949 to 18 (for palm oil) and 29 (for palm kernels) in 1954. However the increased participation of Nigerians as buying agents did not alter the concentration (determined by the proportion of total palm products purchased) of purchases by foreign firms. Table 6.3 shows the estimated minimum tonnage of palm oil and palm kernels purchased by Nigerian buying agents¹ as a proportion of the total tonnage purchased by the Marketing Board. The estimated minimum proportion of palm oil purchased by Nigerian buying agents was less than 3% of the total annual purchase for any single year, and for palm kernels, it was less than 6%.²

An important aspect of the purchasing arrangement was not the concentration of foreign firms but the degree of competition (determined by the number of buying agents) especially among Nigerian agents. Although the proportion of the total Marketing Board

¹ The calculation of the minimum tonnage of palm products purchased by Nigerian buying agents is based upon the minimum purchase requirements of 275 tons for palm oil and 875 tons for palm kernels stipulated by the Marketing Board. See p. 156, footnote¹.

² In 1954, the Marketing Board report showed that less than 5% of all palm products purchased was from Nigerian licensed buying agents. See Sixth Annual Report of the Nigeria Oil Palm Produce Marketing Board, 1954, p. 8.

purchases by Nigerians was negligible, nevertheless the increase in their number signifies the introduction of competitive buying among Nigerian buying agents. Competitive buying was also noticeable among foreign firms which purchased most of the products. As A. Martin's study shows

"Competition between the four foreign firms actually buying in the area is keen and may result in a price being paid above that fixed by the Marketing Board. Competition extends also to credit facilities afforded to middlemen and to the provision of transport and containers."¹

The second marketing reform of great importance to producers was the announcement, in advance, of producer prices.² This policy minimised the pre-war disadvantages to the producers of selling their products to middlemen at a negotiated price. For example, after the Marketing Board's establishment, K.D.S. Baldwin's survey of farmers interviewed shows

¹ Anne Martin, The Oil Palm Economy of the Ibibio Farmer, Ibadan, 1936, p. 17.

² The effectiveness of announced producer prices, at a time when a generally accepted currency (sterling) was in circulation, led to the official withdrawal of local currencies. Unlike the pre-war period, production was no longer related to the value of local currencies.

that the producers

"all stated that they now receive a higher proportion of the price since they could easily find out the price in the nearest buying centre and from that work out within narrow limits the transport differential to their villages and farms."¹

A. Martin's study also confirmed that in 1952 when the buying station price for special grade oil² was £65 per ton, the price actually paid to producers in the villages was £62 per ton³ which allows a margin of about 4.6% of the announced price for transportation.

The proportion of the announced producer price deducted for transport charges was related to the degree of competition among middlemen who were employed on a commission basis⁴ to purchase palm products direct

¹ K.D.S. Baldwin, The Marketing of Cocoa in Western Nigeria, O.U.P. London 1954, p. 15. Baldwin's work refers to cocoa trade, but the improvement in the proportion of the prices of primary products received by producers was general.

² "Special grade oil" was oil of highest quality with a maximum of 4½% free fatty acid. Other grades of oil were Grade I with free fatty acid content of over 4½% but under 9%; Grade II (9% f.f.a. but under 18% f.f.a.); Grade III (18% f.f.a. but under 27%); Grade IV (27% and under 36% f.f.a.); Grade V (over 36% f.f.a.). See Nigeria Oil Palm Produce Marketing Board, First Annual Report, 1949, p. 45.

³ Anne Martin, op.cit., p. 16.

⁴ The commission paid by the agents to the middlemen was reimbursed by the Marketing Board. The amount reimbursed for both palm oil and palm kernels varied between 1949 and 1954. In 1949/50 it was 17/6d a ton; in 1951, 21/6d; 1952/54, 24/3d. See First, Second, Third, Fourth and Sixth Annual Reports of the Nigeria Oil Palm Produce Marketing Board 1949-1954, pp. 41, 25, 27, 7, 8 and 26 respectively.

from producers in villages. Since the middlemen's commission depended on the tonnage they purchased, A. Martin observed that increased competition among middlemen in the purchase of palm products led to the provision of better transport facilities at reduced cost to farmers and to the absence of "monopolistic profits".¹ The essential aspect of the announced producer price was that, unlike the pre-war period, the producer knew the ruling price for his products and received a substantial proportion of the price. The middlemen were thus reduced to performing a useful role by channelling the products from villages to buying centres and receiving a commission for their services.

The introduction of fixed intraseasonal price was not the only change in the producer price system intended to encourage increased production. Another important innovation was the adoption of a system of price/grade differential in the purchase of palm oil. Table 6.4 shows the fixed annual producer prices for the various grades of oil from 1939 to 1954, when between four and six different prices were paid, according to grades, for a ton of palm oil.

A further change in the price system was the maintenance of interseasonal price (in the period

¹ A. Martin, *op.cit.*, p. 16.

1949/54) above the 1949 level, for each grade of oil.¹ The index of prices for all grades of oil (with 1949 as base year), between 1949 and 1954, varied between 100 for the lowest grade and 151 for the special grade oil (see Table 6.5). The higher increases in prices of high quality oil signified the intention of the Marketing Board to encourage the production of improved oil grades.

The final aspect of the marketing re-organisation, intended to stimulate the production of high grade products, was quality control. The Marketing Board had observed that

"In pre-war years it had become evident that Nigerian palm oil could not compete on equal basis in the world's market with the high grade oil produced ... in other areas of production."²

To effect a change the government Department of Marketing and Exports³, undertook the grading of

¹ This interseasonal price policy, to a large extent, indicates the Marketing Board's attempt to comply with its officially recognised objective of price stabilisation. See p. 153.

² Nigeria Oil Palm Produce Marketing Board, First Annual Report, 1949, Lagos 1950, p. 6.

³ Although the Department of Marketing and Exports was officially recognised as a government department, the cost of the operation of the Department was "met in the proportion of 80% by the Marketing Boards and 20% by the Government". Nigeria: Annual Report of the Department of Marketing and Exports for the year 1951-52, Lagos 1954, introduction page.

export palm products by trained inspectors. As shown in Table 6.6, palm products were inspected and graded in over 235 buying stations between 1949 and 1954; and the quality of palm products purchased by the Marketing Board also showed substantial improvement. Until 1949, five grades of oil (Grades I-V) - known as technical oil¹ - with a free fatty acid range of

Table 6.6

Number of Marketing Board Inspection Stations
and the grades of palm oil inspected

1948/49 - 1953/54

Year	Inspection Stations (1)	Grades of Oil Inspected (3)
1948/49	239	5
1949/50	240	6
1950/51	242	5
1951/52	236	5
1952/53	237	4
1953/54	237	4

Sources: Column (1) Annual Report of the Marketing and Exports Department, 1948/49, p. 10; 1949/50-1950/51, p. 14; 1951/52, p. 12; 1952/53, p. 7; 1953/54, p. 3.
Column (2) Sixth Annual Report of the Nigeria Oil Palm Produce Marketing Board, 1954, pp. 13, 14.

¹ Technical oil was defined by the Marketing Board as "those grades (I-V) used for industrial purposes (e.g. for soap manufacture) as opposed to those - special grade - used for edible purposes, e.g. margarine, lard." Nigeria Oil Palm Produce Marketing Board, First Annual Report 1949, Lagos 1950, p. 12.

4½% to 36% were exported. In 1950, special grade oil - known as edible oil - was first exported. By 1954, the quality of oil purchased by the Marketing Board ranged between 0% free fatty acid and less than 27%; and the quality of oil exported contained less than 18% free fatty acid.¹ Table 6.7 shows the

Table 6.7

Grades of Palm Oil Exported by the Marketing Board
1950-1954

Year	Total Quantity Exported (tons) (1)	Edible Oil (Special Grade) (2)	Col 2 as % of Total (3)	Technical Oil (Grades I-V) (4)	Col 4 as % of Total (5)
1950	158,728	8,794	5.6	149,934	94.4
1951	142,859	18,740	13.1	124,119	86.9
1952	175,606	61,478	35.0	114,128	65.0
1953	201,351	110,610	54.9	90,741	45.1
1954	212,198	133,168	62.8	79,030	37.2

Sources and Note

Columns (1), (2), and (4): compiled from the Annual Reports of the Nigeria Oil Palm Produce Marketing Board, 1951, p. 12; 1952, p. 14; 1954, p. 15.

Columns (2) and (5): percentage calculated.

Note: Total quantity exported is less than the total quantity purchased by the Board as shown in Table 6.1. The difference is accounted for mostly by the quantity sold internally to the Nigerian Soap Companies.

¹ The grade of technical oil exported was Grade I and II, i.e. free fatty acid content of over 4½% to under 18%. Technical Grades III-V were sold to the West African Soap Co. (Nigeria) Ltd. The quantities sold to the soap companies (with year in parenthesis) were 6,481 tons (1950); 6,500 tons (1951); 7,724 tons (1952); 10,115 tons (1953); 11,694 tons (1954). See Annual Reports of the Nigeria Oil Palm Produce Marketing Board, 1950, p. 11; 1951, p. 15; 1952, p. 16; 1953, p. 15; 1954, p. 15.

percentage distribution of the different qualities of oil exported from Nigeria for 1950/54. Whereas in 1950, technical grade oil represented 94.4% of total oil exports, by 1954 this had declined to 37.2% of total exports. In contrast, during this period, the proportion of edible oil rose from 5.6% to 62.8% of total oil exports.

Effect of Marketing Re-organisation
on Production

As with the improvement shown in the quality of oil exported because of quality control, the impact of the Marketing Board's changes in the buying and pricing system on producers and on export output was substantial. The large number of buying centres and their proximity to producing villages encouraged producers' direct contact with the buying centres and their familiarity with annual prices and other changes such as the price/grade differential introduced by the Marketing Board. The changes that occurred as a result of the producer's knowledge of prices and of price/grade differential is illustrated by the various grades of palm oil purchased in 1949/54. Whereas in 1949, no special grade oil was produced, by 1954, 60.9% of the total oil purchased was of the special grade.¹ On the other hand, the proportion of Grade I

¹ Another important factor improving the quality of palm products was the rapid increase in the oil mills and hand-presses used. This point will be elaborated below.

oil exported declined from 66.4% of total purchases to 29.9% in 1954. Other lower grade oil showed a similar decline (see Table 6.8). The improvement in the quality of oil produced caused by the producer price/grade differential (see Tables 6.8 and 6.4) brought about the Board's decision to discontinue the purchase of Grade V oil in 1951 and Grade IV in 1953.

The producer's familiarity with the pricing system also encouraged production increases through the effect of the interseasonal prices on changes in traditional hindrances to increased production. As interseasonal prices were continuously higher than the 1949 level, producers were in a position to determine roughly their cost of production and profit margin, and to plan in advance for the expansion of capacity. In the traditional system of production, short run expansion of capacity depended on the frequency of fruit harvesting rather than on either intensive or extensive cultivation, as is the case with annual crops. In the pre-war period, the possibility of frequent harvesting was hindered by the traditional restriction on harvesting periods, communal land ownership, and by the restriction on the employment of labour for harvesting.¹ These

¹ F.E. Buckley, "The Native Oil Palm Industry and Oil Palm Extension Work in Owerri and Calabar Provinces", paper read at the Third West African Agricultural Conference held in Nigeria, June 1938, p. 208; cf. G.C. Dudgeon, The Agricultural and Forest Products of British West Africa, Imperial Institute Handbook, London 1922, p. 99.

traditional hindrances, as shown by A. Martin's and Dr. R.K. Udo's studies, were substantially modified in the post-war period. For example, it was observed that "traditionally, harvesting was allowed on certain days of the ... week but this restriction is virtually non-operative today."¹ One of the factors which caused modifications of the traditional harvesting periods, as Dr. R.K. Udo noted, was the transition from communal land ownership to individual ownership, promoted by the influence of a monetary economy.² Individual land ownership, in turn, encouraged the employment of hired labour paid either in kind or in cash.³ It is possible to isolate non-economic causes which could also have brought changes in institutional obstacles to production.

However, the timing of these changes coincided with improvement in the marketing re-organisation introduced to encourage increased production in the only cash crop produced within the palm belt. This implied that the impact of such improved production incentive as the announced producer price system induced social changes in harvesting, the hiring of labour and the communal land tenure system which

¹ A. Martin, op.cit., p. 11.

² R.K. Udo, "The Patterns of Population Distribution and Settlement in Eastern Nigeria" in The Nigerian Geographical Journal, Dec. 1965, p. 79.

³ A. Martin, op.cit., p. 11.

furthered production increases.

The increased frequency of harvesting,¹ encouraged by competitive buying of palm products and the provision of transport at moderate rates caused substantial annual increases in export purchases.

Professor P.T. Bauer's criticism of the Marketing Board's pricing system was that it was disadvantageous to producers since it involved excessive levies on the income of producers. He observed that the differences between "producer prices and market prices", i.e. the surpluses accumulated by the Marketing Board in the sale of palm products, left the producers with about the same level of income as before the war. For "As selling prices improved a large proportion was withheld from producers, leaving producer prices at about the same proportion of commercial values as before."² He went on to emphasise that when

¹ The effect of frequency of harvesting is analogous to that of double or treble cropping in annual crops where annual output per acre shows a significant change because of repeated cropping within a year.

² P.T. Bauer, "Statistics of Statutory Marketing in West Africa, 1939-51" in Journal of the Royal Statistical Society, vol. 117 (Series A (General) Part I, 1954, p. 9. Professor Bauer's assertion, in the first instance, is incorrect. As already shown in Chapters 4 and 5, in the period 1906/38, the producer received a very small fraction of the products prices paid to the middlemen. After World War II, the producer knew and received the announced producer price which was so much higher than the pre-war II periods. See Tables 2.10 and 6.4. Therefore the producer could not have been left with about the same level of income as before World War II. Professor Bauer's error in his pre-war and post-war comparative analysis of product prices arises from his incorrect assumption that there was before 1948 a generally recognised producer price known to producers and that producer price was THE incentive for production.

"transport costs, and the cost of the services of intermediaries" as well as the "expenses of production" are deducted from the prices received by producers, "the levies on the producers of groundnuts and palm kernels, the most important exports from northern and eastern Nigeria, were over this period as a whole ... at rates of over 50 per cent."¹

The rate of increase in palm oil and palm kernel output and the improvement in palm oil quality in the period 1949/54, plus the fact that prices were so much higher than at any earlier period,² even with the levy, do not indicate that the burden of the levy on producers affected palm products export output. Why was this?

This phenomenon can be explained by two factors. Firstly, like the pre-war years, producers' ignorance about the difference between the producer prices and selling prices, made them unaware and unconcerned with the Marketing Board's system of accumulating surpluses, especially since the impact of the levy was not directly borne by the producers. The producers' major concern was with the announced annual prices which had substantially improved over the 1949 figures as illustrated by the index of price changes for 1949/54 in Table 6.5. Fixed annual producer prices rather

¹ Ibid., pp. 11/12.

² See Tables 2.10 and 5.4.

than selling prices were therefore the more relevant to production.

Secondly, because of the producer's low level of income and his comparative lack of other more productive occupations, the producer's evaluation of earnings from palm products was based on his idea of total cash receipt (prevailing producer price multiplied by total output). Earnings from sales was to him synonymous with profit. He did not therefore regard production cost as important in estimating his profit. If he had, such an estimate of profit would perhaps have affected his profit margin if "producer prices" were "at about the same proportion of commercial values as before" World War II. Thus, since his cash receipt per ton was higher than that of the pre-World War II period, he had a reasonable monetary inducement to increase production.

His greater interest in cash receipt irrespective of production cost (defined to include imputed labour cost) is illustrated by the following examples. He "will walk or cycle several miles to secure another penny or twopence on the sale of a beer bottle of palm oil or another shilling on the sale of a four-gallon tin of palm oil."¹ The second example arises

¹ P.T. Bauer & B.S. Yamey, "The Economics of Marketing Reform" in The Journal of Political Economy, vol. LXII, no. 3, June 1954, pp. 212/213.

from the Production Development Board's experience of purchasing palm fruits at periods of relatively low prices. In 1953, the decline in producer prices for palm oil from £80 a ton (for special oil) to £75.5 a ton (see Table 6.5)

"compelled the Board to reduce its own prices to fruit growers from 3/- per 36 lb to 3/- per 42 lb. This reduction has not affected the fruit intake as was the case when the price was reduced to 2/6 per 36 lb."¹

The time and effort spent in the production of the extra 6 lb was thus irrelevant so long as the price remained unchanged. The producer's interest in the prevailing annual prices therefore favourably affected his production decision and led to an improvement in the quality of palm products and to increases in the tonnage produced without regard to the levies.

To sum up. The effect of the marketing re-organisation on producers and output in 1949/54 is most noticeable in the eradication of the main pre-war hindrances to increased production. As P. Ady remarked, the producer's knowledge of producer prices

"is a great contrast with that obtaining before the war, when the farmer never knew the level of the price from one day to the next and, worse still, his sole source of information about its level was the broker. The short-period speculative element in crop

¹ Fifth Annual Report of the Eastern Regional Production Development Board, 1953/54, Enugu, 1954, p. 13.

marketing has been completely eradicated, and the farmer now has a reasoned basis for his farming ... policy."¹

Also, by 1949 the producer's indebtedness to middlemen had been eliminated through marketing policies introduced by the Marketing Board. And, the changes in the pricing and buying systems accompanied by competitive buying led to a rejection of traditional hindrances to production, an improvement in product quality, and substantial increases in export production.

Changes in Processing

Financial assistance and encouragement from the Nigeria Oil Palm Produce Marketing Board brought another reform - mechanical processing - which encouraged production increases. Of the Marketing Board's accumulated trading surpluses of £22,640,982 (see Table 6.9), a total grant of £9,157,685 was made to the Regional Production Development Boards. These grants were for the establishment of oil mills and plantation development. No national breakdown was made between the expenditure on oil mills and on plantation development. However, a breakdown of the Eastern Regional Production Development Board's expenditure for 1949/54 shows that £925,200 or 64.2% of the Development Board's expenditure was spent on oil mills (see Table 6.10). The first of the Production

¹ P. Ady, "Fluctuation in Incomes of Primary Producers: A Comment" in The Economic Journal, Vol. LXIII, No. 251, September 1953, p. 604.

Development Board's mills was erected at Agbadu on 14th December, 1949, and by December 1954 71 oil mills were in operation in Nigeria. 56 of these mills were erected in Eastern Nigeria (see Table 6.11) - the main palm belt in Nigeria.

The erection of these mills had repercussions on changes in the traditional methods of production. Since processed palm oil by local producers had to compete with that of the Production Board's mills which produced a better quality, the survival of local producers in the industry depended upon changes in processing to meet the Marketing Board's export quality requirements, especially since the low grade oil was no longer purchased by the Board. As a consequence of the lack of quality discrimination in purchases between locally produced oil and oil mill processed oil, and the Marketing Board's quality requirements, the number of hand-presses used by local producers rose from 1,185 in 1948 to about 4,000 in 1951.¹ These figures under-estimate the extent to which hand-presses were used because "Most of the

¹ For 1948 figures which excludes hand-presses under repair, see Annual Report on the Agricultural Department for 1948, Lagos, 1949, p. 49. For 1951 figures see The United Africa Company Ltd., Statistical and Economic Review, No. 7, March 1951, p. 2. A record of hand-presses in use for all the years was not kept. Throughout the period 1949/54 the report of the Company supplying the hand-presses showed that "the demand in Nigeria for hand-presses is very keen ... and the Department has not been able to meet the demand." U.A.C. Ltd., Statistical & Economic Review, No. 5, March 1950, p. 27.

owners use their machines to press other people's fruit for a few pence per tin of oil produced, and some clearly have thriving businesses of this kind."¹ The ratio of hand-presses to producers becomes of minor importance as an indication of machine usage in a communal society, even when no charges are made for the use of the hand-presses.²

The significant aspects of the increased use of hand-presses and oil mills are in the recovery rate of palm oil from the fruit processed and the consequent increases in production, together with the improvement in oil quality. With the hand-presses the recovery rate of the oil content in the fruit is 65%, which is 10% higher than the dominant pre-war traditional method of extraction with a maximum extraction rate of 55%.³ The recovery rate of the Production Development Board's oil mills was in turn

¹ Nigeria, Report on the Agricultural Department for the year 1931, Lagos, 1932, p. 19.

² In 1952 A. Martin also remarked on "the great increase in the number and usage of hand-presses since the war", A. Martin, *op.cit.*, p. 11.

³ For oil recovery rate by hand-presses and traditional extraction methods see United Africa Company, "The Future of the Nigerian Oil Industry" in African Affairs, Vol. 47, 1948, p. 44; cf. J.E. Gray, *op.cit.*, pp. 30-37.

higher than that of hand-presses. Table 6.12 shows the productive efficiency (determined by the quality and quantity of oil produced) of the Development Board's mills for 1950/54. The percentage of the oil content recovered by the mills averaged 86.5%, and the proportion of special grade oil produced (which improved with operational efficiency) rose from 22.6%

Table 6.12

Palm Oil Output, Quality and Percentage
of Oil Recovered per Ton of Fruit by Oil Mills 1950-54¹

Year	No. of mills	Fruit milled (ton)	Oil output (ton)	% of fruit oil content ₂ recovered ₂	Col 4 as % of fruit oil content ₃	% of Special Grade oil
	(1)	(2)	(3)	(4)	(5)	(6)
1950/51	32	7,570	1,263	16.7	87.9	22.6
1951/52	46	14,294	2,090	14.6	76.8	23.5
1952/53	50	33,609	5,716	17.0	89.5	71.0
1953/54	56	42,031	7,229	17.2	90.5	93.0

Sources: Column (1) see Table 6.11, Column (1).
Columns (2) & (3) Annual Reports of the Eastern Regional Production Development Board 1951/52, p. 17, 1953/54, p. 13.
Column (4) Column (3) as % of Column (2).
Column (5) Column (4) as % of 19, i.e. the actual % of oil in the palm fruit.

- Note: 1. The table refers to Eastern Nigerian Mills where statistical records were kept.
2. This column represents the % of actual oil contained in the fruit. (Research on Nigerian palm fruit shows that the actual % of oil contained was 19% of the fruit weight, of which 17% could be recovered by mechanical extraction. See J.E. Gray, "Native Methods of Preparing Palm Oil" in Nigeria, First Annual Bulletin of the Agricultural Department, 1st July, 1922, pp. 30-37.)
3. Column (5) represents the % of the actual oil content of the fruit recovered.

in 1950 to 93% in 1954.

The annual average increases in export production, at the period when hand-presses and mills were increasingly used, is shown on p. 148. Irrespective of oil mill superior technical efficiency in production (as compared with hand-press) oil mill extracted oil accounted for only a fraction of the annual increases in the tonnage of palm oil purchased in 1949/54. Mill processed oil was first purchased by the Marketing Board in 1949¹, and between 1949 and 1954 oil mill processed oil purchased (see Table 6.13) increased at an annual rate of 1,015 tons. This is only 7.2% of the total annual rate of increase of 14,038 tons in palm oil purchased during 1949/54. In view of the superior extraction rate of oil mills over hand-presses, why did oil mill extracted oil account for only a fraction of the increases in the tonnage purchased in the period 1949/54?

One of the reasons was inadequate fruit supplies to mills, particularly in Western Nigeria. With the increased processing by hand-presses only areas with few hand-presses sold surplus quantities of fruits to the mills. For example, in mid-Western Nigeria (the major palm belt in the west) alternative sources of

¹ Nigeria Oil Palm Produce Marketing Board, First Annual Report 1949, Lagos, 1950, p. 25.

earnings from the sale of timber and rubber discouraged the purchase of hand-presses. The mills thus depended upon the surplus fruit supplies from local groves for processing. During periods of timber and rubber booms the diversion of labour from palm fruit harvesting was reflected in the reduction of fruit sold to the mills. For example, in the Warri Province, where all the Western oil mills were erected, the Western Regional Production Development Board reported that

"The Warri Mills suffered ... in 1950 and 1951 from the timber and rubber booms through inadequate fruit supplies. Mills which were working double shifts in March 1950 had by June reverted to either single shift or have been temporarily closed."¹

A second hindrance to a higher annual rate of increase in mill production peculiar to Western Nigeria was "inefficient supervision".² This affected the operational efficiency of the mills as shown by the proportion of the fruit oil content recovered in comparison with the Eastern Nigerian mills. Whereas, for instance, the average percentage of oil recovered from the fruit in the Eastern Nigerian mills for 1950/54 was 86.5%, that of the West was only 73.7%.

¹ Western Regional Production Development Board, Nigeria, Annual Report for 1951/52, Ibadan 1952, p. 19.

² Western Regional Production Development Board, Annual Report 1952/3, Lagos, 1953, p. 18. Mill supervision in Western Nigeria was, as explained in the report, adversely affected by the limited number of managerial staff.

Operating problems however were not confined to Western Nigeria. In the East where 78.8% of the mills were located, maintenance problems adversely affected the operation of the mills and the annual rate of increase in output. In the period 1953/54 for example, delays in the "deliveries of component parts", difficulties in the "transport of heavy machinery over bad roads, weak bridges, inadequate ferry facilities"¹ prevented some mills from running at full productive capacity. Managerial inefficiency, problems of maintenance, and inadequate fruit supplies to the mills, therefore counterbalanced the technical superiority of oil mill production as compared with hand-presses (which were not subject to these problems).

Effect of Changes in Processing on Local Producers

The most important effect on producers of processing with hand-presses was the redistribution of the traditional labour activities amongst men, women, and children, and the consequent greater participation of men in palm oil processing. Traditionally, social principles rather than economic efficiency influenced labour allocation between the sexes. This principle involved the allocation of routine and light work to women and children and the more arduous, dangerous and

¹ Nigeria, Fifth Annual Report of the Eastern Regional Production Development Board 1953-54, Enugu, 1954, p. 13.

heavy duties to men.¹

The various stages of the productive process in palm oil processing allowed the traditional pattern of labour, i.e. in the five major stages involved in the preparation of palm oil - harvesting; preparing the fruit for boiling; depulping; extraction; and the supply of wood and water for boiling - all but harvesting was traditionally classified as light and routine and so to be performed by women and children. The increased use of hand-presses in processing influenced this allocational pattern in that these presses were operated by the men and so resulted in a major re-distribution of processing activities between the sexes. To illustrate the effect of the use of hand-presses in re-distributing labour activities (based on traditional social principles) a comparison is made below in man-hours spent using the pre-war

¹ Sexual division of labour is a common phenomenon in African traditional productive processing. See e.g. International Labour Office, African Labour Survey, Geneva 1958, pp. 64-74. Phyllis N. Kaberry, Women of the Grassfields, Colonial Research Publication, No. 14 (London H.M.S.O. 1952). W.E. Moore, "The Adaptation of African Labour Systems to Social Changes" in M.J. Herskovits and M. Harwitz (eds.) Economic Transition in Africa, Routledge & Kegan Paul, 1964, pp. 277-297. R. Galletti, K.D.S. Baldwin and I.O. Dina, Nigerian Cocoa Farmers, An Economy of Yoruba Cocoa Farming Families, O.U.P. London, 1956, p. 295. A. Martina, "A Discussion of the Concept of Disguised Unemployment in Tropical Agriculture with Special Reference to Africa South of the Sahara" in The South African Journal of Economics, Vol. 34, No. 4, Dec. 1966, pp. 305-321.

traditional method of preparing oil, with that of the post-war method involving the use of hand-presses. The comparative distribution of man-hours between men, women, and children, is shown in Table 6.14. Total man-hours spent by men increased from 600 man-hours to 1,050 man-hours while that of women and children

Table 6.14

Pre and Post-war Comparative Allocation of Man-Hours in the Processing of a ton of Fruit, 1906/38 and 1949/54

	Pre-war Method (A)			Post-war Method (B)		
	Man Hour	Woman Hour	Child Hour	Man Hour	Woman Hour	Child Hour
Harvesting	520	-	-	520	-	-
Preparing fruit	80	-	1,600	80	-	1,600
Depulping	-	200	-	-	200	-
Extracting	-	500	500	450	-	-
Wood & Water	-	500	500	-	500	500
Total	600	1,200	2,600	1,050	700	2,100
Total reduced to man hours ¹	600	800	650	1,050	467	525

Pre-war: Total man-hours per ton 2050

Post-war: Total man-hours per ton 2042

Sources: Pre-war: Computed from Nigeria, Second Annual Bulletin of the Agricultural Dept., July 1923, Tables V and VI, pp. 20 and 21.

Post-war: Computed from figures by A. Martin, The Oil Palm Economy of the Ibibio Farmer, Ibadan, 1956, p. 12.

Note 1. 1 man-hour = $\frac{2}{3}$ woman-hour = $\frac{1}{4}$ child hour.

2. A. Martin's study shows that 22.5 man-hours were required to extract a cwt. of palm oil by hand-press operated by men.

declined from 1,450 man-hours to 992 man-hours.

A major effect of the re-distribution of labour in favour of women and children arises from the diversion of the extra man-hours to palm kernels production. Assuming that women and children spent the same number of hours in production within the industry as in the pre-war period, both groups jointly spent an equivalent of 458 man-hours (the difference between women and child man-hours in the two periods) or 31.6% more time on palm kernels production. This assumption is based on the fact that women still depended on palm kernels for the purchase of food items¹ as in the pre-war years. For example, in 1953 it was maintained that

"much trade in local markets is in ... the sale of palm kernels against yams from the Cross River area and dried fish from the sea board. Women ... use palm kernels their traditional perquisite."²

Productive motivation arising from the need to purchase food, which arises from the woman's traditional

1

The withdrawal of local currencies early in 1949 did not affect the barter trade in food items with palm kernels. This was particularly so in the purchase of certain food items whose exchange value was less than what could be purchased with the lowest denomination of the official currency. For example, $\frac{1}{2}$ d worth of perishables such as vegetables, fruits, pepper, etc. was more than an average family could consume before the product decayed, therefore the palm kernels were used in buying smaller quantities.

2

A. Martin, op.cit., p. 15.

responsibility for feeding the family,¹ signifies that the savings in man-hours in favour of women and children consequent upon hand-press processing was utilised in the production of palm kernels. The additional man-hours spent by woman and children on palm kernel production was reflected in the increased rate of palm kernel production, particularly between the years 1949 and 1954.

A second effect on producers, arising from the use of hand-presses, was the encouragement to invest in processing as a means of improvement in earnings. In the pre-war period without adequate quality differential, with no announced producer price, with traditional restrictions on the harvesting period, and indebtedness of producers to middlemen, the dependence on palm production as a source of income was an insecure one. Post-war changes in the industry and the increased monetisation of the economy promoted more producer investment. The obvious stage of the production process requiring priority investment was extraction. Estimates of hand-presses used in 1951 show that at least £260,000 had been spent by producers since 1949. This figure does not adequately reflect producers' willingness to invest in

¹ In the palm belt villages, the responsibility of feeding the family rests with women rather than men. Men are responsible for such family expenditure as school fees, clothing and other expenditure mostly paid for in money rather than in produce.

hand-presses as producers' demand was not always satisfied. In 1949, for example, the Agricultural Department mentioned that "the keen demand for palm oil presses continued to increase ... but unfortunately there was no great improvement in the supply position during the year" and that some presses were sold "at enhanced black market prices."¹ Also in 1952, A. Martin showed that "Hand-presses are in great demand and their prices rose from £45 to £65 in 12 months preceding August, 1953 and is still rising."²

Were such expenditures justified? This will depend upon the improvement in producers' income arising from such investment. To determine whether the producers benefited, the differential earnings between hand-press production and traditional production, taking price/grade differential into consideration, provides a rough guide. A producer's estimated earnings based on a ton of palm oil produced by the two methods (taking grade differential and the average producer price for 1949/54 into consideration) show that in 1949/54 production by hand-press fetched an average of £60.8 per ton while that using traditional methods was £28.0 per ton.³ If allowance

¹ Sessional Paper No. 12 of 1949, Lagos, 1949, p. 50.

² A. Martin, op.cit., p. 12.

³ The calculation of the estimate is shown in Appendix 6.1.

is made for cost, depreciation, and interest on borrowing, based on this estimate, the hand-press producer made a margin of profit (depending on the percentage deducted for interest, cost and depreciation as well as the total tonnage produced within a season) over the traditional producer.

The effect of the higher earnings would consequently be reflected in producers' income over the period 1949/54. Table 6.15 shows total producers'

Table 6.15

Palm Oil Producer Money Income and Index of
Producer Money Income 1949-1954

Year	Producer Price ¹ £/ton (1)	Index of Producer Price (1949 = 100) (2)	Producer Money Income (£) (3)	Index of Producer Money Income (1949 = 100) (4)
1949	42.75	100	6,906,048.75	100
1950	42.75	100	7,144,546	103
1951	55.0	129	8,001,180	116
1952	61.0	143	11,609,276	168
1953	75.5	177	16,928,157	245
1954	65.0	152	14,078,455	204

Sources: Column (1) Table 6.9.
 Column (2) Calculation based on column (1).
 Column (3) Column (1) multiplied by volume of purchases - Table 6.1, column (1).
 Column (4) Calculation based on column (3).

Note: 1. Producer prices used are the prices for the grades in which over 50% of the Marketing Board purchases were made. See Table 6.5. E.g. in 1949/52 Grade I producer prices are used because between 56.3% and 66.4% of the total purchases were grade I. In 1953 and 1954, special oil grade prices are used.

money income and the index of total producer income for 1949/54. Producer money income and the index of producer money income rose throughout the period especially between 1952 and 1954. However, unlike real income, money income does not adequately reflect the improvement in producer income. The estimate of real income in a rural community where an appropriate deflator is difficult to ascertain, makes such an exercise meaningless. The use of an urban consumer price index or the wholesale prices of imported goods are mere academic exercises unsuitable as deflators in the determination of rural real income since most of the producers' expenditure is within the rural sector where food prices do not rise as fast as in the urban sector. It is thus difficult to estimate the extent to which the rise in consumer price altered the improvement in the index of producer money income between 1949 and 1954. However, it could be inferred that since local producers' expenditure was on subsistence items involving limited cash transactions, the rise in consumer price may not have altered the improvement in the index of producer money income significantly.

An indirect effect of the introduction of hand-press processing on the income of producers, and the introduction of oil mills, was the encouragement to

farmers, unable to secure hand-presses for processing, to seek wage employment in village oil mills.¹ In the 1953/54 season, a labour force of 1,368 was employed in 56 mills in Eastern Nigeria.² This number represents an insignificant proportion of the 1.3 million farmers in Eastern Nigeria in 1953.³ Yet, when local labour employed (24-25 men unable to secure hand-presses) per village mill is considered as a proportion of the working population of 250⁴ in an average village, this proportion then becomes more significant in a few villages. Furthermore, in addition to their contribution towards mill production, the labour employed in local mills provided a regular source of fruit supply to the mills. Since the grade of oil which they would have produced by traditional methods was not in demand, their fruits harvested after work were sold to the mills. No figures are available

¹ The selection of these groups of farmers was by a locally appointed village committee by the Production Board. Members of the Production Board were also represented. See Third Annual Report of the Eastern Regional Production Development Board 1951/52, Part 1, Enugu, 1952, p. 12.

² For labour force employed in oil mills see Fifth Annual Report of the Eastern Regional Production Development Board 1953/54, Enugu 1954, Appendix iii.

³ For the agricultural population of Eastern Nigeria, see Nigeria: Annual Abstract of Statistics 1964, Table 2.3, p. 13.

⁴ Dr. R.K. Udo, op.cit., p. 78.

on the tonnage of fruits sold nor is there a breakdown of the expenditure by the Production Board on fruits purchased into those sold by the mills' employees and from other producers. However, in the 1953/54 season, £400,000 worth of fruits was purchased from "private farmers and employees at local mills".¹ The importance of fruit sales to the mills by local employees arises from the possible loss which they would have incurred for not being able to sell the non-marketable 'low grade oil produced by traditional methods. Through selling their fruits, they were compensated for the possible loss, and also received wages for their labour at the mills.

The Introduction of Plantation Cultivation

The introduction of plantation cultivation in the Nigerian palm oil industry in the period 1939/54 signifies a major policy departure from that of the period 1906/38 when for political and administrative reasons the government had decided against the introduction of plantation cultivation.² It is therefore necessary, before the economic implications of the introduction of plantation cultivation are discussed, to examine why plantation development became possible after 1949.

¹ Fifth Annual Report of the Eastern Regional Production Development Board 1953/54, p. 13.

² See Chapter 3

Essential among the reasons for this was Nigeria's gradual political transition from full colonial status to internal self-government. This change implied a gradual transfer of authority from foreign administrators to Nigerians. For example, when the Marketing Board was formed in 1949, it was specifically stipulated that, as far as was possible, all essential administrative posts in the Marketing Board and in the Production Development Boards should be held by Nigerians. This policy was gradually implemented, and by 1954, all the major administrative posts in the Production Development Boards were held by Nigerians.¹ With Nigerians increasingly holding the

¹ In 1949 when the Eastern Regional Production Development Board was formed, there were 10 members of the Board, 8 of whom were Europeans. In 1954/55 all the 9 members of the Board were Nigerians. See First Annual Report of the Eastern Regional Production Development Board 1949/50, Enugu 1950, p. 2 and Sixth Annual Report of the Eastern Regional Production Development Board 1954/55, Enugu 1955, p. 2.

A contrast may be observed between the nationality composition of members of the Production Development Board (which was directly involved with land acquisition) and the Nigeria Oil Palm Produce Marketing Board (directly concerned with marketing) which reflects the importance placed on Nigerians in "the policy-making machinery" concerned with land acquisition. For example, in the Nigeria Oil Palm Produce Marketing Board the membership comprised 3 British Officers and 3 Nigerians in 1949 and remained the same in 1954. See Nigeria Oil Palm Produce Marketing Board, First Annual Report 1949, Lagos 1950, p. 4 and Sixth Annual Report of the Nigeria Oil Palm Produce Marketing Board, 1954, p. 2.

reins of affairs in the Boards, the long-standing fears and suspicion about foreign land acquisition without adequate consideration for local interest declined. The earlier idea of a conflict between the foreign administrators and Nigerians was no longer an important issue because of the safeguard provided by Nigerian participation in decision making.

The appointment of Nigerians to the Development Boards was a necessary but not a sufficient reason for the successful lease of local land for plantation cultivation. The methods through which the system of land lease was contained within the established communal land use system were perhaps the most vital. The consent and co-operation of local land-owners in all areas in which plantation projects were envisaged was required.

Three main types of approach met with the approval of the land-owners. The first was the formation of co-operative groups within the producing area. With local inhabitants as the sole members of the groups, it was possible for them legally to lease local waste-land voluntarily to themselves for the establishment of plantations. The funds and management personnel for these co-operative plantations were provided by the Production Development Boards. For example, by 1954 2,000 acres of land were leased to the Okitipupa and Ondo Native Administration Palm

Partnership Plantations financed by the Production Board.¹

Another approach was that associated with local desire for the siting of community development projects in villages.² Farmers were, because of the expected local benefits (in the form of local employment opportunity, road development, and the provision of water supply), willing to lease land to the government under the guarantee that this land would not be permanently dispossessed from the local communities - as might have been the case with outright sale. In 1951/52, Ishiagu village in Afikpo Division (E. Nigeria) voluntarily leased 1,200 acres of land to the Production Board under the community development scheme project.³

¹ See Western Regional Production Development Board Report 1953/54, p. 14. Cf. J.C. Wells, "Nigerian Government Spending on Agricultural Development 1962/3-1966/7" in The Nigerian Journal of Economic & Social Studies, Vol. 9, No. 3, Nov. 1967, p. 273, where it is pointed out that the Eastern Region Ministry of Rural Development's effort "aims at effecting a modest revision of land tenure patterns through the formation of local co-operatives and releasing co-operative land to members in coherent blocks."

² The enthusiasm for the establishment of the Production Board projects in villages was very great in E. Nigeria. For example, in 1951, the Board's decision to site a mill in one of two adjacent rival villages almost resulted in a fight between women of the two villages but for "the active intervention of the District Officer who prevented the women of the two villages coming to blows for the honour of obtaining a mill in each of their individual villages when only one was available for both" Third Annual Report of the Eastern Regional Production Development Board 1951-52, Part 1, Enugu 1952, p. 8.

³ Ibid., pp. 23-24.

To ensure local confidence in the plantation projects, local farmers were increasingly incorporated into the management of local organisations. In the Production Boards' words,

"A Committee composed of representatives of the local people and representatives of the management has been established so that common problems can be discussed and, if profits are made, the Board can be advised how these profits can best be used to further local interests.¹

The third method through which land was leased for plantation development was the transfer of disputed communal (wasteland) boundary areas between two villages to the government as a means of avoiding inter-village war or prolonged and expensive court litigation. For example, the dispute between Ikun and Okon villages in Eastern Nigeria ended with the lease of the disputed area of about 1,000 acres to the Production Board in 1952.²

The policy of Nigerianisation, naturally identified with local interest in policy making in the industry, and the methods adopted for plantation land lease in the period 1939/54, unlike the period 1906/38, show that the time was politically opportune for the introduction of plantation cultivation. The farmers' fears and suspicion of foreign-dominated administration were gradually weakened by the introduction of Nigerians who

¹ Ibid., p. 12.

² Ibid., p. 24.

were considered to be more closely identified with the interests of the farmers and land owners. Secondly, the three methods adopted for land lease were not only consistent with the interests of the local inhabitants but also did not conflict with communal land use principles.

The aim of plantation establishment was to utilize local wasteland for cultivation with the objective of obtaining higher palm oil yields per acre.¹ Earlier research experiments had demonstrated that the yield of the best Nigerian palm fruit - the green fruited thin-shell variety - selected for breeding - yielded 2,759 lbs² and 3,647 lbs of palm oil per acre when processed by hand-press and oil mills respectively. In 1950/54 over £184,000, i.e. 12.8% of the total average expenditure by the Eastern Nigeria Production Development Board, was invested in palm plantations (see Table 6.10). Acreage planted increased from 954 acres in 1949 to 3,233 acres (see Table 6.16) in 1954 - an increase of 278.6% in five years.

The impact of plantation cultivation in 1949/54 did not so much result in increased oil production from

¹ What was regarded as wasteland constituted 67.0% of the total cultivatable land in 1950 (see Table 6.17).

² E.H.G. Smith, "Further Yields from the Calabar Plantation Oil Palms" in the Tenth Annual Bulletin of the Agricultural Department, 1st August, 1951, p. 12.

plantation palms as in the extension of cultivatable palm oil acreage with future production potential. As the gestation period between planting and harvesting of palm trees is five years, only the 954 acres planted in 1949 would have been harvested by 1954. But through the Production Board's investment in plantations on wastelands, local land was increasingly utilized for improved future production. Furthermore, since the wastelands (with no opportunity cost in the local communities) were leased free to Production Boards, these lands earned an economic rent represented by the entire future earnings from the wastelands.¹

Defects of the Marketing Board Policy

A major criticism by some economists of the Marketing Board's policy was "the prohibition of the export of inferior, but commercially marketable qualities of produce."² Critics hold the view that such practices "frustrate the export of substandard output ... induce the uneconomic expenditure of additional resources ... deflect production into less valuable

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Rent is used here in the classical sense and refers to the entire earnings of land acquired as "free gifts of nature". Cf. Joan Robinson, The Economics of Imperfect Competition, (London, Macmillan & Co. Ltd.) 1954, p. 102.

2 P.T. Bauer & B.S. Yamey, "The Economics of Marketing Reform" in The Journal of Political Economy, Vol. LXII, No. 3, June 1954, p. 227.

activities" and therefore "adversely affect the interests of producers".¹ The experience of the Nigeria Oil Palm Produce Marketing Board on discontinuing the purchase of low grade oil, weakens the validity of the above theoretical deductions. The decision to abandon the purchase of substandard oil arose as a result of the observed continuous improvement in the quality of oil purchased rather than as a decree meant to discourage the production of substandard products. The substandard producers (if determined by the proportion of substandard grades - grades IV and V - out of the total grades purchased in 1949/52)² were relatively few in the main producing areas, and most were compensated for the possible loss in output by the opportunity offered to them for wage employment in oil mills and the sale of their fruits to the mills. Secondly, the improvement in oil quality was due to the influence of the Marketing Board's pricing policy on the producers' decision to invest in hand-presses, and the consequent income derived through hand-press processing.

The main defect of the Nigeria Oil Palm Produce Marketing Board policy, which has never previously been

¹ Ibid., p. 228.

² Grade V oil which was not purchased after 1950 was 0.4% and 0.5% of total output in 1949 and 1950 respectively. Similarly in 1952 when the purchase of grade IV oil was abandoned it was 1.5% of total oil output. See Table 5.8.

raised, is the rationality of its investment policies in the industry as distinct from its price policies. During the Marketing Board's operation up to 1954, the major increases in production which resulted in its accumulation of surpluses, originated from non-plantation production. Throughout this period - 1949/54 - no channels of public investment or credit provision were created by which producers could benefit. For example, in the Eastern Regional Production Board's loan scheme financed by the Marketing Board, it was specifically emphasised that no loans should be made for hand-presses.¹ On the other hand, over 60% of the Production Board's development funds was invested in oil mills. In its preference for investment in the technically superior processing system, the Production Board failed to consider hand-press processing advantages such as abundant local labour, adequate fruit, and the continuous operation of the hand-presses through the year. These advantages offset the technical

¹ Over 3,500 applications for loans to purchase palm oil presses were made in 1950/51. None of these loans were approved. The reason given was that hand-presses fell within "those types of business of which there is clearly no shortage". Shortage, in relation to palm oil presses was a relative term. That there were as many applicants for loans was in itself adequate proof that there were shortages in palm oil presses which would have further contributed to production increases. See Second Annual Report of the Eastern Regional Development Board 1950/51, p. 3.

superiority of the oil mills (dominated by managerial inefficiency and operation below optimum capacity) and consequently resulted in higher annual rates of increase for hand-press processing. As will be shown in Chapter 7, the emphasis on oil mill production led to a higher unit cost of production as compared with production by hand-press.

Summary

The main impetus to changes in Nigerian palm product export production in 1939/54 as compared with the earlier period were expanded British wartime imports, the organisational experiences gained from British wartime buying policy (the organisation structure of which formed the nucleus of the Nigerian Oil Palm Produce Marketing Board), Nigeria's need for development funds after World War II and the Marketing Board's intention to maintain producer prices at a level not lower than that of 1949. The marketing and processing re-organisation introduced by the Marketing Board led to a higher rate of increases in production. The important reforms introduced were the announcement of annual producer prices, the maintenance of inter-seasonal prices at a level above 1949 prices, abolition of independent purchases by private foreign firms, the appointment of buying agents, and the encouragement of hand-press processing through quality

control and the price/grade differential system.

The major changes which these reforms brought about and which encouraged production increases were the competition in purchasing encouraged by the appointment of many licensed buying agents, the shortening of fruit harvesting periods, the re-distribution of production activities between the sexes, investment in hand-presses, the gradual abandonment of such institutional obstacles to production as communal land ownership and opposition to the employment of paid labour in harvesting.

The essential weakness of the Marketing Board was its investment policies. Based on its preference for investment in a processing method with a high technical rate of oil recovery, it neglected the advantages of a less sophisticated technique. It thus ignored such economic limitations as managerial efficiency which is one of the factors that create a disparity in output between advanced and developing economies in the use of similar techniques in agricultural and industrial production.

Chapter 7

Economic Planning and Export Production in the Oil Palm Industry 1955-1965

With the introduction of a Regional Constitution in Nigeria in October 1954, the development of the oil palm industry was no longer the direct responsibility of the Nigeria Oil Palm Produce Marketing Board, but that of the Marketing Boards and governments within the Regions of dominant production¹ - the Eastern and Western Regions of Nigeria. The proportion of the total tonnage of palm products exported from both regions within 1955/65, as well as the value of primary products exported from Eastern Nigeria, show that the Eastern Region assumed the major responsibility for the development of the oil palm industry. Tables 7.1 and 7.2 show that in the period 1955/65, an average of 90.4% of all the export production of palm oil

¹ The Nigeria Oil Palm Produce Marketing Board was dissolved in 1954 and in its place were created "single all-purpose Marketing Boards in each Region responsible for all the purchasing arrangements within the Region and for price stabilisation, research and development". Between 1955 and 1958, a Central Marketing Board was also created "to be responsible for the overseas marketing and export of the principal Nigerian commodities on behalf of Regional Boards." See First Annual Report of the Nigeria Central Marketing Board 1955, p. 2. Unlike the previous Nigeria Oil Palm Produce Marketing Board, the Central Marketing Board was only concerned with the external sales of primary products and not with their development, which was the responsibility of the Regional governments and Marketing Boards.

originated from the Eastern Region, and that an average of 96.8% of the total export value of her primary products was from palm products.

The significance of palm products, as the most important agricultural primary export product, to the Eastern Region and her concern for its development is illustrated by the investment priority accorded to the industry in comparison with other agricultural projects in the two plan periods - 1955/61 and 1962/68. In both these plans,¹ the average annual expenditure - at 1957 prices - in the oil palm industry was not only higher than that in other agricultural projects, but also higher than that of the Nigeria Oil Palm Produce Marketing Board in the period 1949/54. But, unlike the period 1949/54, when the Nigeria Oil Palm Produce Marketing Board's investment in marketing and production as well as its price policy contributed towards substantial annual average increases in palm products export output (the tonnage of palm oil and palm kernels purchased by the Marketing Board increased at an average annual rate of 14,038 tons and 20,026 tons respectively²), over the period 1955-65 the

¹ Two development plans were in operation during the period 1955-65. These were (i) the Development Plan for 1955/62 and (ii) the National Development Plan 1962/68. See Outline of Development Plan 1955/62, Sessional Paper No. 4, 1956; National Development Plan 1962/68 (Federal Ministry of Economic Planning) Lagos 1962.

² See Chapter 6, p. 148.

investment in marketing and production, plus the price policy pursued by the Eastern Region in the industry, as will be shown in the analysis, did not produce similar results in export output. During 1955/65, non-plantation export production of both palm oil and palm kernels declined at an annual average rate of 5,406 tons and 1,490 tons respectively¹ - an annual average decline of 3.5% and .8%. The present chapter analyses the Eastern Regional plans expenditures in the industry and examines why the expenditure in the period 1955/65 did not promote production increases.

Development Plan Expenditure² on Palm Products 1955/65

In the two plan periods - 1955/61 and 1962/68 - the oil palm industry was one of several agricultural projects included in the development plans.³

¹ Figures used in the calculation of the trend are from Table 7.3.

² The Development Plan expenditure figures used in this chapter are at 1957 prices.

³ Development planning began in 1946 with the "Ten Year Plan for Development and Welfare" 1946-1956. It was subsequently realised that the period was too long and the plan was re-adjusted to make two periods, 1946-1951 and 1951-1956. The second plan period, i.e. 1951-1956, was again revised as a result of the Federal Constitution of 1954. Within these planned periods investments in major development projects were delayed until the financial implications of the new constitution on regional revenue allocation had been clarified, and the recommendations of the World Bank Mission (submitted in Sept. 1954 and published in 1955) had been made. Until these points, which were clarified in 1955, had been established, comprehensive development planning was not in operation in Nigeria.

According to the plans' classifications, it fell within the area of agricultural "primary production". Investment expenditure in oil palm production was therefore not a separate item in the plans. It is only by examining the various channels through which investment was directed into primary production that the extent of investment in the oil palm industry can be determined. These channels can be conveniently distinguished as public and private. In the public sector, investment was directed through the Eastern Regional Development Corporation¹ and the Ministry of Agriculture; and private sector investment was by Eastern Nigerian farmers and businessmen. Within these two distinct sectors - public and private - the type of investment also differed. While, for instance, the public sector invested mainly in the sphere of processing and cultivation, the private

¹ The Corporation's name has been changed from time to time according to constitutional changes in Nigeria. At its inception in 1949 it was known as the Eastern Regional Production Development Board. In Feb. 1955 it was changed to the Eastern Regional Development Board, and at the time of the country's independence in 1960 it was re-named the Eastern Nigeria Development Corporation. These changes did not affect the agricultural development activities of the Corporation. In the analysis of investment under the first plan, the name Eastern Regional Development Corporation will be used, and thereafter the Eastern Nigeria Development Corporation.

sector's investment was most pronounced in marketing.¹

An estimate of investment by the public sector in the first plan period - 1955/61 - is based primarily on expenditure by the Eastern Regional Development Corporation on plantations. The Ministry of Agriculture's expenditure is excluded because its expenditure allocation on separate agricultural projects was not differentiated from such non-agricultural items as administration and construction. Moreover, the Ministry's projects were unclassified minor agricultural schemes diversified within local farming areas with no distinct record for each scheme.² Since 83.6% of all public expenditure on agricultural development was channelled through the Eastern Regional Development Corporation³, the Ministry of Agriculture's expenditure does not seriously affect the estimate of expenditure on the oil palm industry during the first plan period.

¹ Investment in marketing, as used here, refers to expenditure by Nigerian licensed buying agents on produce purchases and transport expenditure from buying stations to export depots.

² The only exception was the expenditure on experimental and research stations where records were kept.

³ Of the total sum of £874,000 allocated for primary production in 1955/62 (see Outline of Development Plan, 1955-60, Sessional Paper No. 4, 1956, p. 2) £731,000 or 83.6% was transferred by the Eastern Regional Government to the Eastern Regional Development Corporation as grants for agricultural development. See Seventh Annual Report of the Eastern Nigeria Development Corporation 1961/62 and the Accounts dated 31st March, 1962, p. 42.

Table 7.4 gives the breakdown of expenditure - at 1957 prices - by the Eastern Regional Development Corporation on agricultural projects for the first plan period 1955/61. A total sum of £3.7m was spent on all agricultural projects. £1,034,434 or 28.2% of the total agricultural expenditure was on plantation cultivation of oil palm trees, cocoa, rubber, coconut and cashews; and £2.6m or 70.6% on oil mills. £431,644 or 41.7% of the expenditure on cultivation was devoted to oil palm tree cultivation and £2.6m or 98.4% of the non-cultivation expenditure was on palm oil mills. The total sum of £3,021,444 or 82.4% of all public expenditure on agriculture was spent on the development of the oil palm industry. Public expenditure on the oil palm industry exceeded the plan's allocation of £874,000 for all primary production because of the additional funds obtained from other sources¹ for the development of the industry.

Between the first and second plan period total expenditure on agriculture by the Eastern Nigeria Development Corporation rose from £3.7m in 1955/61 to £4.7m - an increase of 27.9% (see Table 7.4).

¹ The expenditure not included in the plan was the £5,827,492 transferred by the old Nigeria Palm Produce Marketing Board to the Eastern Regional Development Corporation at the commencement of the first plan period, *ibid.*, p. 42.

Expenditure on the cultivation of export crops - oil palm trees, cocoa, and rubber - amounted to £2,701,527 or 57.6% of total expenditure. £928,766 or 34.4% of the cultivation expenditure was on oil palms, while expenditures on rubber and cocoa were respectively £944,131 or 34.9% and £828,630 or 30.7% of total expenditure on cultivation. £1,973,100 or 99.3% of the non-cultivation expenditure was on oil mills. Investment in the oil palm industry amounted to £2,901,866 or 61.9% of the total expenditure on agriculture in the second plan.

The expenditure of the Eastern Nigeria Development Corporation on agricultural cultivation was augmented by the Ministry of Agriculture during 1962/64. The Ministry's expenditure programme was at this time sufficiently classified, and concentrated on investment in the cultivation of export crops by local farmers and also on the cultivation of export crops in farm settlements. Expenditure on the cultivation of oil palm trees took the form of direct financial subsidies to local farmers who complied

with regulations set by the Ministry of Agriculture.¹

A breakdown of the expenditure of the Ministry of Agriculture on agriculture for 1962/64 is shown in Table 7.5. £194,000 or 13.4% of the expenditure on cultivation was on subsidies paid to farmers for the

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The palm grove rehabilitation programme was first introduced in 1955. It involved the thinning of natural palm groves to 30 palms per acre and the planting of new varieties of seedlings to a density of 60 per acre. To compensate for the labour and maintenance costs involved, a subsidy of £5 per acre up to a maximum of 5 acres was paid to farmers. See Annual Report for the Department of Agriculture 1954/55, p. 8.

The government's intention to increase the acreage of rehabilitated palm groves per farmer, or group of farmers, led in 1962 to a restriction of the subsidies paid to those with a minimum of five acres and a maximum of ten acres. In their comment on the rehabilitation scheme, the Ministry of Agriculture pointed out in 1962 that "Few farmers own as individuals as much as five acres of natural palm groves. The five acres minimum is therefore intended to encourage a community approach to palm grove rehabilitation ... In Eastern Nigeria oil palm groves are either communally owned by the villages or communally harvested during certain periods of the year for the purpose of financing community projects. The new rehabilitation scheme is likely to encourage this practice and also to lead to the gradual consolidation of land ownership." See Community Development in Eastern Nigeria. Official Document No. 20 of 1962, Enugu, 1962, p. 29. Acreage of oil palm trees rehabilitated increased from 1,531 acres in 1961 to 5,679 acres in 1965. See Table 7.14.

Table 7.5

Ministry of Agriculture Expenditure on Agriculture
in 1962-1964 at 1957 prices

Item	Expenditure 1962/63 £'000	Expenditure 1963/64 £'000	Total 1962-64 £'000	% of Total
Rubber cultivation	36	100	136	9.4
Palm grove rehabilitation	61	133	194	13.4
Cocoa cultivation	27	48	75	5.2
Farm settlement cultivation	251	767	1,018	70.5
Cross River Scheme	2	20	22	1.5
	377	1,068	1,445	100.0

Source: National Development Plan, Progress Report, 1964, p. 164.

rehabilitation of oil palm groves. The expenditure on farm settlements, in which 50.5%¹ of the crops cultivated was oil palm, was £1,018,000 or 70.5% of total expenditure on cultivation. If an estimated 50% of the farm expenditure is attributed to oil palm cultivation, a total sum of £703,000 or 48.7% of the Ministry of Agriculture's expenditure was on the cultivation of oil palms. Expenditure by both the Eastern Nigeria Development Corporation and the Ministry of Agriculture

¹ See Eastern Nigeria, Project 4 - Farm Settlements Scheme (undated), p. 3.

on oil palm cultivation gives a total sum of £1.6m or 39.4% of all public cultivation expenditures in 1962/64.

Analysis of expenditure by the Ministry of Agriculture and the Eastern Nigeria Development Corporation over the two plan periods shows that the oil palm industry had the largest share of all agricultural investment. In the first plan period, about £3.0m or 82.4% of all the Eastern Regional Development Corporation's expenditure on agricultural development was devoted to oil palm cultivation and processing. And in the second plan, the figure was about £3.8m or 80.9% of all the public sector's agricultural expenditure.

Additional expenditure, originating from government loans to the private sector, was also largely devoted to investment in the marketing of oil palm products. Table 7.6 shows the loans made to Nigerian businessmen who were licensed buying agents in 1955-63. £23.9m was loaned to buying agents for palm products. Although the loans to these agents averaged only 12.4% of the total loans to all primary products agents, yet the magnitude of the investment in marketing is underlined by the fact that it exceeded all the public expenditure on oil palm cultivation and processing for the two plan periods by £17.8m. No breakdown of the various items on which the expenditure was made, nor the number of borrowers

is available. The nature of the licensed agents' activities as well as field work evidence¹ suggests,

Table 7.6

Loans and Advances made to
Palm Products Licensed Buying Agents, 1955-65

Year	Palm Products Loans £'000 (1)	Total Primary Products Loans £'000 (2)	Col 1 as % of Col 2 (3)
1955	1,588	14,744	10.8
1956	2,422	18,049	13.4
1957	3,200	22,046	14.5
1958	4,073	26,851	15.2
1959	3,545	24,198	14.6
1960	1,633	15,838	10.3
1961	2,501	17,684	14.1
1962	1,997	24,644	8.1
1963	2,928	28,639	10.2
	23,887	192,693	12.4

Source: Columns (1) and (2) compiled from Nigeria, Annual Abstract of Statistics 1964, p. 134. Column (3) Percentage calculated.

¹ Evidence of the high proportion of loans spent on transport vehicles is supported by a case study I made in 1966. 48 Nigerian businessmen who were licensed buying agents and who borrowed money for the palm products trade between 1955 and 1965 at Aba, Onitsha, Port-Harcourt, Umuahia and Uyo confirmed that most of their expenditure was on the purchase of commercial vehicles used in transporting palm products from villages to the export depots, whilst the carrying of passengers, and other items was secondary. By 1965, only 15% of these men still continued to carry produce. The withdrawal of the other 85% from the trade is explained by the decline in the price of palm products as compared with the earlier post-war years. The approach adopted in the field study was that of collecting the names of Nigerian merchants who registered as Marketing Board buying agents in 1955. Questionnaires were issued to these agents. Details required included the amount invested, products purchased, length of years served as buying agents, reason for discontinuation, system of purchase from producers, average tonnage purchased per month, profit margin on trade, buying districts, distance from buying station to export depot and annual allowance paid by the Marketing Board.

however, that a substantial proportion of the loan was spent on the purchase of vehicles to convey palm products from villages, and to transport them to ports of shipment and bulk oil plants.

Average annual expenditure on cultivation, processing, and marketing by both the public and private sectors during the two plan periods was higher in the oil palm industry than in 1950/54. Whereas in 1950/54, a total of £1,109,500¹, or a yearly average of £221,900, was spent on cultivation and processing in Eastern Nigeria by the Nigeria Oil Palm Produce Marketing Board, during the plan periods, £6,626,310², or a yearly average of £662,031, was spent by the public sector in Eastern Nigeria on cultivation and processing. The average annual expenditure on cultivation and processing during the plan periods was thus three times higher than in 1949/54.

A noticeable difference also existed in the proportional allocation of expenditure between cultivation and processing during the plan periods as

¹ See Table 7.7.

² See Table 7.7.

compared with 1949/54. Table 7.7 shows the proportional allocation of expenditure between cultivation and processing during 1949/54 and during 1955/64.

Table 7.7

Proportional Allocation of Expenditure at 1957 Prices
between Cultivation and Processing 1950/54 and 1955/64

Period	Total Expenditure £ (1)	% of Total (2)	Expenditure on Processing (3)	Col 3 as % Col 1 (4)	Expenditure on Cultivation (5)	Col 5 as % Col 1
1950/54	1,109,500	100	925,200	83.4	184,300	16.6
1955/64	6,626,310	100	2,562,900	68.9	2,063,410	31.2

Sources: 1950/54 : Table 6.10.
1955/64 : Tables 7.4 and 7.5.
Percentages calculated.

In 1950/54, 83.4% and 16.6% of total expenditure was spent on processing and cultivation respectively. In the plan periods, the proportion of total expenditure spent on processing was 68.9% while that on cultivation was 31.2%. The proportion of total expenditure spent on cultivation during the plan periods was thus about twice as high as in 1950/54.

Why did the comparatively higher investment in Eastern Nigeria during the plan periods as compared with 1949/54 not induce increases in export production, especially with a higher proportion spent on cultivation? The question is of particular importance since the same organisational policy introduced by the Nigeria Oil Palm Produce Marketing Board in 1949/54 was adopted in the Eastern Region for the development of the oil palm

industry.¹

Factors Influencing the Decline of Export
Output 1955-65

One of the most significant factors causing the decline in export production was the distribution of investment between the two export producing sectors - plantation and local farmers. Table 7.8 shows the allocation of expenditure in cultivation and processing between plantation and local producers in 1955/64.

Table 7.8

Allocation of Expenditure between Plantation
and Local Producers in 1955/61 and 1962/64 at 1957 Prices.

Period	PLANTATIONS					LOCAL PRODUCERS			
	Total Exp. £'000 (1)	Exp. on Oil Mills £'000 (2)	Col 3 as % Col 1 (3)	Exp. on Culti- vation £'000 (4)	Col 4 as % Col 1 (5)	Exp. on Extrac- tion £'000 (6)	Col 6 as % Col 1 (7)	Exp. on Culti- vation £'000 (8)	Col 8 as % Col 1 (9)
1955- 61	3,021	2,590	85.7	432	14.3	-	-	-	-
1962- 64	3,605	1,973	54.7	929	25.8	-	-	703	19.5

Sources: Compiled from Tables 7.4 and 7.5.
Percentage calculated.

¹ The purchase of palm products through appointed agents, grants by the Marketing Boards to the Development Corporations for the expansion of cultivation, and the announcement of producer prices at the commencement of each season were all adopted by the Eastern Regional Marketing Board.

In the first plan period - 1955/61 - all expenditure in the industry was devoted to plantation production. Within this sector, expenditure on oil mills and cultivation was respectively 85.7% and 14.3% of total expenditure in the industry. In the second plan period, 19.5% of total investment (in the form of subsidies) was made to local producers for cultivation, but not processing. In the plantation sector, emphasis shifted from expenditure on oil mills to cultivation; and, in both sectors - plantation and local production - expenditure on cultivation accounted for 45.3% of total expenditure as opposed to only 14.3% during the first plan period. Two salient factors affecting production emerge from this expenditure allocation pattern. Firstly, 68.9% of total expenditure in the industry during the two plan periods was on plantation oil mill processing. Secondly, expenditure in the local producing sector - the major producing sector - was only 10.6% of the total expenditure for the same period. To what extent did these factors affect production?

The magnitude of expenditure on oil mill processing of plantation fruit only induced an increase of annual average rate of 561 tons of palm oil and 130 tons of palm kernels in 1955/65.¹ The negligible

¹ For figures used in the calculation of the trend see Table 7.3.

yearly increases made little difference to the total tonnage of palm products purchased by the Marketing Board because the output of palm products from plantations formed a negligible proportion of total export production (see Table 7.9). Throughout the period - 1955/65 - the tonnage of oil mills processed oil was less than 5% of total palm oil purchases by the Eastern Nigerian Marketing Board. The investment made in plantation production (oil mills and cultivation) which was 68.9% of total expenditure in the industry during the two plan periods, resulted in only negligible increases in export output. As in 1949/54, the managerial problems involved in the Nigerian oil mills reduced the efficiency of the oil mills in production below the levels anticipated and adversely affected export output.¹

A second factor which adversely affected production of palm products by local farmers was the deliberate change in policy by the Eastern Nigerian Marketing Board in the fixing of interseasonal prices. Unlike 1949/54, when the index of interseasonal producer prices was constantly higher than that of the base year 1949 (i.e. the year when the Nigeria Palm Produce Marketing Board was established), interseasonal producer prices for 1955/65 were mostly below that of the base year - 1955.

¹ See Chapter 6.

Decreases in interseasonal producer prices were most pronounced in special grade oil, which at this period formed over 80% of total export output (see Table 7.10). The index of interseasonal producer prices for special grade oil declined from 100 in 1955 to 80 in 1961 - the end of the first plan period. In the second plan period the index of interseasonal prices for special grade oil was less than 70 (see Table 7.11).

This decline in interseasonal producer prices did not reflect either the decline in world prices for palm products (see Table 7.12) or a rise in the Marketing Board's operational costs in palm products purchases. Rather, it was because "the heavy financial commitments undertaken by the Board in 1955"¹ necessitated the reduction of interseasonal prices as a means of accumulating substantial trading surpluses for investment in other development plan projects. In 1961, for instance, the Eastern Nigeria Marketing Board announced that "The producer prices which the Board has now fixed are set at levels which will enable the Board from its 1962 operations to make further contributions to development" and "appeals to the farming community to understand that it is only by making sacrifices now that it will be possible to raise Eastern Nigeria from her present

¹ Eastern Region of Nigeria: Third Annual Report of the Eastern Regional Marketing Board, 1st Jan 1957 - 31st Dec. 1957 p. 22.

poverty to the status of a dynamic and developing nation".¹ Again, in 1962 the Marketing Board reiterated its reason for reducing the level of interseasonal prices, pointing out that "If the Board was to continue to contribute anything to development, any increase in producer prices seemed out of the question."²

The decline in the interseasonal producer prices in 1955/65 is reflected in the palm oil producer money income and the index of producer money income, as shown in Table 7.13. In both plan periods the index of producer money income with 1955/56 as the base year shows that producers were adversely affected by the reduction in producer prices. This was particularly pronounced during the second plan period when the index of producer money income varied between 74.1 and 55.4.

¹ Eastern Nigeria: Seventh Annual Report of the Eastern Nigeria Marketing Board, 1st Jan. 1961-31st Dec. 1961, p. 18.

² Eastern Nigeria: Eighth Annual Report of the Eastern Nigeria Marketing Board, 1st Jan. 1962-31st Dec. 1962, p. 13.

Table 7.13

Palm Oil Producer Money Income and Index of
Producer Money Income, 1955/65

Year	Producer Av. Price £/ton (1)	Index of Producer Price (1955=100) (2)	Producer Money Income (Gross) £ (3)	Index of Producer Money Income (1949=100) (4)
1955/56	40.3	100.0	6,953,443	100.0
1956/57	40.3	100.0	6,599,891	94.9
1957/58	39.3	97.5	6,568,366	94.4
1958/59	40.3	100.0	7,094,896	102.0
1959/60	40.3	100.0	7,130,521	102.5
1960/61	37.0	91.8	6,219,737	89.4
1961/62	32.5	80.6	5,151,640	74.1
1962/63	32.5	80.6	3,850,048	55.4
1963/64	33.3	82.6	4,472,556	64.3
1964/65	33.3	82.6	4,336,293	62.3

Sources: Column (1) Computed from Table 7.11.
 Column (3) Column (1) multiplied by total palm
 oil output in Table 7.9, column (1).
 Index calculated.

The relative deterioration shown by the index of producer money income in the second plan period as compared to the first is also noticeable in the palm oil production trend. Whereas in 1955/60, when the index of money income varied between 94.4 and 102.5, local export palm oil output slightly increased at an average annual rate of 6,912 tons; in 1961/64 export palm oil output decreased at an average annual rate of 6,903 tons.¹

¹ For figures used in the calculation of the production trend see Table 7.9.

"The low purchases" as the Marketing Board observed in 1962

"coincided with the first year of drastically reduced producer prices, and it would be idle to deny that there is some causal connection. As long as the low prices last ... it is reasonable to expect that every year a certain amount of potential production for export will not be harvested because the extra effort is not regarded as worthwhile."¹

Table 7.14

Acreage of Oil Palm Trees Rehabilitated and Index of Average Producer Prices, 1955-1965

Year	Av. Producer Price £/ton (1)	Index of Producer Price 1955 = 100 (2)	Acreage Rehabilitated (3)
1955	41.75	100	98
1956	40.25	96.4	62
1957	40.25	96.4	146
1958	39.25	94.0	327
1959	40.25	96.4	-
1960	40.25	96.4	163
1961	37.0	88.6	1,531
1962	32.5	77.8	1,732
1963	32.5	77.8	3,717
1964	33.25	79.6	4,852
1965	33.25	79.6	5,679

Sources: Column (1) See Table 7.11.
 Column (3) Annual Reports for the Department of Agriculture 1954/55, p. 9;
 1957/58, p. 13; 1963/64, p. 18;
 1965/66, p. 12.
 Index calculated.

¹ Eastern Nigeria: Eighth Annual Report of the Eastern Nigeria Marketing Board, 1st Jan. 1962-31st Dec. 1962, p. 31.

Since export processing and sales to the Marketing Board was not regarded as worthwhile because of declining interseasonal prices, cultivation incentive measures (in the form of £5 subsidy per acre) provided one of the alternative sources of earnings in the industry. As shown in Table 7.14, the acreage of oil palm trees rehabilitated was most pronounced from 1961 when the index of average producer prices for the period was between 88.6 and 77.8. While only 163 acres were rehabilitated in 1960, 1,531 acres were rehabilitated in 1961. And in 1962 and 1963, when producer prices were at their lowest, the increase in acreage rehabilitated was the highest - an annual average increase of 1,985 acres. The difference in the acreage rehabilitated during the two plan periods thus suggests that some producers spent more time on cultivation, as a result of the subsidy paid, at the expense of export processing. The timing of the subsidy, though of advantage to producers, adversely affected export production and contributed to the declining trend in export purchases. Furthermore, the newly planted seedlings did not contribute to production in 1961/65 because of the long gestation period between planting and harvesting.

The internal sale of palm oil (an alternative source of producer's income) also contributed to the annual decline in the Marketing Board's export

purchases. For the four years - 1959/62 - (for which internal prices of palm oil¹ are available) the index of internal prices at Lagos (Fed. Capital), Kaduna (Northern Nigeria), Enugu and Port-Harcourt (Eastern Nigeria) show a continuous rise (see Table 7.15).

Table 7.15

Internal Prices of Palm Oil in
Selected Nigerian Towns 1959/62

Year	Lagos £/ton	Index of Lagos Price 1959=100	Kaduna £/ton	Index of Kaduna Price 1959=100	Enugu £/ton	Index of Enugu Price 1959=100	Port Har- court £/ton	Index of P. Harcourt Price 1959=100
1959	93.3	100.0	98.9	100.0	60.7	100.0	63.5	100.0
1960	96.1	103.0	95.2	96.3	62.5	103.6	63.5	100.0
1961	99.8	107.0	116.7	118.0	81.2	133.8	72.8	114.6
1962	128.8	138.0	118.2	119.5	93.3	153.7	86.8	136.7

Source: Nigeria Annual Abstract of Statistics 1964, pp. 110-112.
Index calculated.

Note: The prices given in the Annual Abstract are in pence per pint. This has been converted to £/ton by using the liquid weights as given in the World Almanac and Book of Facts, N. York, 1967, p. 765. 1 pint = 16 oz. = 1 lb.

index of all internal prices was particularly pronounced in 1961 and 1962 when export producer prices were at their lowest level (see Table 7.13). The tonnage of

¹ The wide differences observed in the internal prices of palm oil in the three capitals of the Regions and in Port-Harcourt are caused by the fact that palm products are not produced in the two regions - West and North - to the extent to which they are in the East.

palm oil railed from Eastern to Northern Nigeria¹ (where palm oil is not produced) in 1957/65 (the only years when figures are available) is shown in Table 7.16.

Table 7.16

Quantity of Palm Oil Railed from Eastern to Northern Nigeria, 1957/65

<u>Year</u>	<u>Tonnage Railed</u>
1957	5,810
1958	8,047
1959	9,619
1960	9,970
1961	10,078
1962	10,118
1963	10,615
1964	10,962
1965	11,149

Source: (i) Eastern Region: Annual Report for the Dept. of Agriculture, 1959/60, p. 15.
(ii) Eastern Nigeria: Annual Reports: Agricultural Division 1963/66, pp. 15, 18, 14 respectively.

Palm oil railed from Eastern to Northern Nigeria increased continuously from 5,810 tons in 1957 to 11,149 tons in 1965. The increase in annual tonnage railed in 1959/62 was associated not only with the rise in the index of Kaduna local prices but also with the decline in the Marketing Board's interseasonal producer

¹ Internal prices are not available in any of the major Northern towns except the capital - Kaduna. Since palm oil is not produced in the North, the high level of Kaduna prices is indicative of general palm oil prices in the North.

prices. Again, the increase in annual sales to the North was more pronounced from 1961 when the Marketing Board producer prices were at their lowest level. While, for instance, the average annual tonnage railed in 1957/60 was 8,361.5 tons, in 1961/65 it averaged 10,584.5 tons a year. The statistics of palm oil tonnage sold internally at Enugu, Port-Harcourt and Lagos are not available, but the rise in the index of internal prices in these towns, and the increases in sales to Northern Nigeria as a result of the rise in the price index of Kaduna prices, are indicative of the expanded quantity of exportable palm oil sold internally.¹ The diversion of some export palm oil to internal consumption, as a result of improved internal prices and expanding demand (when the Marketing Board interseasonal producer prices were declining) was, therefore, one of the factors which adversely affected export purchases, particularly during the second plan period.

The social and economic development of the economy consequent upon the development plan expenditure, at

¹ A further explanation of the increase in internal sales was the rise in the urban areas working population within the two plan periods. For example, the population of Lagos rose from 272,000 in 1953 to 665,000 in 1963. The population of the other towns mentioned also showed similar increases. See Nigeria Digest of Statistics, Vol. 14, Nos. 3 & 4, July and October 1965, p. 3.

the period of deteriorating producer prices, also had an indirect adverse effect on export production in the industry. The factor most affected was male labour utilized at a crucial stage of production - harvesting. Because of the risk involved in climbing during harvesting, the age range of the working population deployed in climbing is between 18 and 30. This age group constitutes the main working population migrating¹ from villages, either as a result of the pull of alternative employment opportunities in the other sectors of the economy, or of the push associated with deteriorating income in local production. The effect of such migration for wage employment in other agricultural wage projects and urban industries caused by the desire for higher income (relative to earnings from export palm products) as will shortly be shown,

¹ For instance, in his study on the problems of farm mechanisation in Eastern Nigeria between 1956 and 1961, Mr. W.O. Achuku also emphasised labour scarcity of the 15 to 30 year age group created by migration to urban centres, as one of the crucial hindrances to mechanisation. He showed "that between 1956 and 1961, of about 50% of the net loss of farm population to the cities only 10% were persons over 30, while the rest were between 15 and 30 years" and that these working groups were "just the type of men the farm cannot afford to lose". "Analytical Approach to Agricultural Mechanisation Problems in Less Developed Countries with Special Emphasis on Eastern Nigeria" in United Nations Conference on Application of Science and Technology for the Benefit of Less Developed Areas, Rome, 27th September, 1962, p. 3.

creates labour scarcity of a special type¹ in palm oil export production.

Another essential group of labour in the industry affected by social changes in the economy was child labour. Child labour (determined in terms of man-hours contributed in the production of a ton of palm oil) which accounted for 25.7% of the total labour time spent in production in the 1949/54 period,² was curtailed by the introduction of universal primary education in the first plan period.³ For instance, in 1956 it was estimated that less than 22% of Eastern Nigerian children went to school.⁴ By 1961 (the end of the first Plan) 85% took advantage of the universal primary education scheme.⁵ Child labour was used at two stages in the production process - preparing fruit and carrying water and wood. Time spent at school,

¹ Labour scarcity of a special type in the palm oil industry refers only to the relevant labour of 18-30 years age group deployed in harvesting as distinct from labour scarcity in the local agriculture sector.

² See Chapter 6, p. 181, Table 6.14.

³ Universal primary education was first introduced in Eastern Nigeria in January 1957. See Eastern Region of Nigeria, Budget Speech by Dr. S.E. Imoke, 26th March 1957, Enugu 1957, p. 3.

⁴ Eastern Region of Nigeria, Self-Government in the Eastern Region Part II, Official Document No. 1 of 1958, Enugu 1958, p. 68.

⁵ Eastern Nigeria, Annual Report Ministry of Education, Enugu 1962, p. 18.

unaccompanied by a re-organisation of work between women and children,¹ caused a loss of time in processing, and a consequent adverse effect on the total tonnage of palm products processed per year.

The expansion of existing agricultural projects and the introduction of new ones, arising from the development expenditure in the second plan was one of the factors which adversely affected male labour participation in local processing in areas where the projects were located. The expansion in the cultivation of palm trees, and cocoa, and the introduction of rubber cultivation, offered a growing opportunity for the young migrant labourer in the Eastern Nigeria Development Corporation's agricultural projects. Comparative employment figures for the Corporation's agricultural projects in the two plan periods are only available for 1956/57 and 1962/63 (see Table 7.17). Whereas in 1956/57 only 4,255 local men were employed in the various agricultural projects, in 1962/63 local labour employed had risen to 14,055. Since it was "the policy of the E.R.D.C. always to recruit the labour force from the local inhabitants of any area where development is taking place"² male labour harvesting

¹ This arises from the constraint imposed by the traditional division of labour activities in processing.

² Eastern Region of Nigeria: Self-Government in Eastern Region, Part II, Official Document, No. 1 of 1958, Enugu 1958, p. 161.

Table 7.17

Unskilled Labour Employed by the E.N.D.C.
1956/57; 1962/63

Projects	Unskilled Labour Employed 1956/57 (1)	Unskilled Labour Employed 1962/63 (2)
Palm Oil Plantations	860	3,529
Oil Mills	3,000	1,367
Cocoa Plantations	114	3,593
Coconut "	140	-
Cashew "	141	103
Rubber "	-	5,463
Total	4,255	14,055

Source: Column (1) Eastern Region of Nigeria, Self-Government in the Eastern Region, Part II, Official Document No. 1 of 1958, p. 161.
Column (2) Compiled from Eastern Nigeria, Annual Statistical Digest 1965, Official Document, No. 21, of 1966, pp. 84, 85.

time was shortened (by the working time spent at the agricultural projects) in areas where these projects were located.

Two effects, adverse to local export processing, are manifest from the employment of male labour in plantations. Firstly, since the working day was spent on the plantation, only a few hours in the evening were devoted to harvesting. It therefore took a longer time to harvest all the fruits in local palm groves. Secondly, as the ripe palm fruits have to be harvested within a specified time - usually ten days - before they are over-ripe and unsuitable for processing, a

proportion of the fruit was allowed to rot unharvested. The substitution of woman and child labour in harvesting was restricted both by tradition and by the intricate manoeuvres involved in climbing, so that time spent in harvesting was limited to time spent outside working hours in plantations. The curtailment of the men's time in harvesting therefore contributed to the yearly decline in the non-plantation palm products export tonnage during the second plan period.

Another drain on the local male labour force was the growth of manufacturing industries during the plan period. As local palm oil processing was the main industry in which most unskilled local labour was deployed, the development of manufacturing offered more remunerative alternative employment opportunity to some men who would otherwise be employed in palm oil processing. Table 7.18 shows the distribution of manufacturing establishments in 1960/64. By March 1964, manufacturing establishments in eastern Nigeria had increased from 9 in 1960 to a total of 56 in 1964.

The number of manufacturing plants¹ (employing ten or more persons) also rose from 171 in 1962 to 256 in 1965 (Table 7.19). In the 171 manufacturing plants (for which employment statistics are available as at 1962 - Table 7.20) 5,597 unskilled labourers were employed. The increase in the number of manufacturing plants from 171 in 1962 to 256 in 1965 indicates that by 1965 the unskilled labour force in manufacturing establishments would have shown some increase over the 1962 figures, especially since most of the manufacturing projects were of a labour intensive type.²

The attraction of local palm oil producers away from palm oil production near areas where industries were located, was one of the reasons given by the

¹ The distinction made between "manufacturing establishment" and "manufacturing plant" by the Statistical Office Industrial Directory 1965 arises from the organisation of manufacturing units in Nigeria. For example, the Eastern Nigerian Industrial Department is responsible for the development of the publicly owned industries in the region. This department is responsible for the manufacture of such products as cements, steel and furniture which are individually referred to as manufacturing establishments by the Statistical Office. The plants in each of these manufacturing establishments are referred to as manufacturing plants.

² For example the furniture factory established at Port Harcourt in 1963 employed between 1,000 and 2,000 men using simple tools as opposed to highly mechanised machinery. See Eastern Nigeria, Industrial Directory, Official Document No. 29 of 1963, Enugu, p. 11.

Marketing Board for the decline in palm products export purchases. The Board observed in 1962 that the "high unskilled labour wage rate paid by the petroleum industry has attracted producers from palm oil production in many areas ... this has contributed to the decline in palm oil production since 1960".¹

Associated with the increased number of workers in large towns was the development of small-scale service industries which also attracted much local labour.

P. Kilby's study of the development of small industries in Eastern Nigeria shows that in 1962, 28,721 males were employed in such service industries as tailoring, carpentry, motor repairs, banking, radio repairs etc., particularly in large cities with expanding industrial enterprises.² It is difficult to ascertain the extent to which these development projects (associated with the plan expenditure) affected local palm production. It is however reasonable to suggest that since most of the labour

¹ Eastern Nigeria, Eighth Annual Report of the Eastern Nigeria Marketing Board, 1st Jan. 1962 - 31st Dec. 1962, Enugu 1963, p. 14.

² P. Kilby, Development of Small Industries in Eastern Nigeria, Enugu 1963, p. 4. Comparative figures employed in small-scale industries for an earlier date are not available. However, Kilby's work shows that the new wave of employment was associated with the growth of cities during the period 1960/62.

force employed previously depended on palm products processing as their major source of income, their absence from local production - either temporarily or permanently - contributed in some measure to the decline in palm products export production, particularly in the second plan period.

To sum up: several factors accounted for the ineffectiveness of the 1955/61, 1962/68 plan expenditure in inducing increases in palm products export output. Among these was the allocation of expenditure between the two producing sectors - plantation and local producers. This emphasis on expenditure on plantation oil mills processing, as opposed to expenditure on hand-presses for local producers, failed to generate as much growth in output as was anticipated by the planners. On the other hand, expenditure on cultivation - in both sectors - resulted in the increase of acreage cultivated. For instance, between 1955/65 an addition of 20,006 acres¹ was cultivated in plantations and 15,949 acres² in local farming areas in 1962/64. But, because of the long gestation period between cultivation and maximum fruit yield - 12 years - the

¹ Figures computed from E.N.D.C.: Development, Vol. 10, No. 27, July/Sept. 1966, Statistical Appendix, pp. 57-60.

² Fed. Republic of Nigeria, National Development Plan Progress Report 1964, Lagos 1965, p. 144.

young cultivated plants, as in the period 1949/54¹, did not contribute significantly to export production in 1955/65. Secondly, the introduction of subsidies for cultivation, at periods of declining producer prices, offered producers an alternative source of income.² Unlike 1949/54 when producers were wholly occupied in harvesting and processing wild grove fruits, the payment of subsidies from 1962 necessitated the sharing of producers' labour time between cultivation and processing to the disadvantage of export output. The most important factors which contributed to the decline in export production were the modification of the Marketing Board's price policy and the excessive levy on producers, consequent upon its objective of accumulating trading surpluses for development investment. The Board's modified price policy contributed to the increase in internal sales of exportable palm oil and the general labour pull to towns. These factors accompanied by the reduction in time spent by men and children in processing as a result of the social

¹ In Chapter 6, p. 194, it was shown that palm fruits from new seedlings planted during 1949/54 contributed less than 1% of the total Production Board palm oil export output.

² The 1964 plan projects report attributed "farmers' enthusiasm for the rehabilitation scheme" to "subsidy grant as an incentive device". See Fed. Republic of Nigeria: National Development Plan, Progress Report 1964, Lagos 1965, p. 144.

and economic development of the economy adversely affected export production.

Appraisal of Government Investment Policy on
Export Production in the Oil Palm Industry
1955/65

I.

The 1962/68 plan expenditure allocation singled out primary production as the priority project. And within the "primary production" sector the oil palm industry received the highest allocation in the two plan periods - 82.4% in 1955/61 and 80.9% in 1962/64. Two salient reasons, derived from government documents, account for the priority of the oil palm industry. The first is that it is the major source of unskilled labour employment in the region and "has great possibilities of improvement and can offer in the short and medium terms, numerous channels for absorption of unemployed labour."¹ Such expenditure is therefore "an endeavour to harness the enthusiasm of the people of this Region to accomplish the tasks of social and economic development".² Secondly, that palm products "form the basis of the money economy of Eastern Nigeria and account for about 80% of the Region's export revenue."³ These reasons,

¹ Eastern Nigeria Manpower Committee: Proposals for Solving the Problem of Unemployment in E. Nigeria, mimeographed document (undated), p. 4.

² Community Development in E. Nigeria, Official Document No. 20 of 1962, p. 1.

³ Eastern Nigeria Manpower Committee, op.cit. (undated), p. 9.

namely, that the oil palm industry is the single highest employer of unskilled labour and that it is the basis of the Region's revenue, are justified by qualitative as well as quantitative evidence as shown in Chapter 1. These facts seem to support the government policy priority.

Government expenditure in the industry within the two plan periods does not show that its policy objective of promoting greater labour participation in palm production was achieved. The employment opportunity created through the expenditure on oil palm plantations and oil mills was negligible as compared with either the total population engaged in palm oil production or with the alternative labour that would have been deployed in the industry if the oil mill expenditure had been allocated to hand-presses for local producers. For example, in 1962, 3,529¹ labourers as compared with an estimated 3,670,800² oil

¹ Figures compiled from Eastern Nigeria, Annual Statistical Digest, 1965, Official Document No. 21 of 1966, pp. 84/85.

² The total Eastern Nigerian adult population engaged in agriculture in the 1962/63 census was 5,244,000. Of these 70% were estimated to be engaged in palm production. See Eastern Nigeria, Census Office Report, Enugu 1964, pp. 2 and 4.

palm producers were employed in plantation production. 2,318¹ or 65.6% of the total number employed in plantation production worked at 105 oil mills. An estimated expenditure of £225,000 on the 105 mills² (which does not include installation cost, building or running capital) would provide employment for an estimated 40,385³ men in hand-press processing.

Expenditure on hand-presses in local production has additional advantages. Firstly, it eliminates the working capital involved in running the oil mills. For example, between 1955 and 1964, £3,299,100 was spent as working capital at all the Development Board's oil mills (see Table 7.21). On the other hand, local production with hand-presses (run on the family labour basis) involved little or no running cost since no wages were paid. Secondly, since about 95% of the

¹ Figures derived from Table 7.20, Columns (4) and (5).

² This estimate which should be regarded as low is based on £5,000, the cost of a mill in 1947/48 (the only year for which a figure is available). See Nigeria, Annual Report of the Commerce and Industries Department 1947/48, Lagos 1948, p. 25. It therefore does not take into consideration increases in the cost of mills over the period 1948 to 1965.

³ The figure is obtained by dividing the estimated cost of a mill by the cost of a hand-press - £65 - as given for 1953. The figure derived is multiplied by 5 which is the number of men employed in operating the hand-press as shown by A. Martin's field study. See A. Martin, The Oil Palm Economy of the Ibibio Farmer, Ibadan 1956, p. 12.

total export output of palm products originated from local producers, the addition to hand-presses used in processing contributed to the greater absolute increases in the tonnage of export palm products as was illustrated in 1949/54. Thirdly, unit cost of production in local hand-press processing is lower than that of oil mills. For example in 1955, average labour cost per ton of palm oil produced as estimated by the Eastern Nigeria Development Corporation was £82.2 at Kwa Falls (the first plantation established in 1947). In 1964, the estimated labour cost per ton had risen to £98.4¹ due to wage increases.

To sum up, in the Nigerian oil palm industry, investment in hand-press processing as opposed to mill processing (necessitating a capital-intensive technique) had merits favourable to the government's main objectives of creating greater employment opportunity and of offering a better prospect for improved income earnings in the industry. These merits included

1

See Eastern Nigeria Development Corporation: Development, Vol. 10, No. 27, 1966, p. 57. Labour cost was a contributory factor to the losses incurred in plantation production. In the six plantations producing palm oil for which the Corporations provided a profit and loss account, only one showed a trading profit. Cumulative losses on oil mills and plantations at 31st March, 1963, amounted to £502,706 and £296,587 respectively. See Eighth Annual Report of the Eastern Nigeria Development Corporation 1962/63 and the Accounts Dated 31st March, 1963, p. 36.

savings on capital investment requirements,¹ and a higher rate of increase in product output at a lower

1

This saving could arise not only from the possible reduction in the magnitude of direct government expenditure on hand-presses but also due to the possibilities of re-investment of the existing supply of savings in rural areas. These savings which are non-transferable - in the sense that they are only available for investment in local projects - constitute a saving on government direct expenditure.

unit cost of production.¹

¹ The above phenomenon, i.e. the merits of a labour intensive technique - involving a low degree of mechanisation - over the capital intensive type, has also been revealed by recent studies on industrial projects and agricultural processing in other underdeveloped countries. See, for example, S.D. Thapar, "Small Scale vs Large Scale Industries" in India in The Economic Weekly Annual, vol. 6, Jan. 1958, pp. 164-66; United Nations, "Problems of Industrialization in relation to Economic Development in the Countries of Asia and the Far East" in Economic Bulletin for Asia and the Far East, Vol. IX, No. 3, Dec. 1958, pp. 4-67; Wilfred Malenbaum, "India and China: Contrasts in Development Performance" in The American Economic Review, Vol. LXIX, No. 3, June 1959, pp. 284-309; M.M. El-Eman, "The Process of Economic Growth" in UAR - The Institute of National Planning Memo No. 175, Cairo, 14th April, 1962, p. 11; S. Chakrabarti, Aspects of Production Functions and Productivity in Indian Manufacturing (unpublished Ph.D. thesis) London University, 1962, esp. Chapter 5; S. Okita, "Choice of techniques: Japan's experience and its implication" in K. Berrill (ed) Economic Development with Special Reference to East Asia, St. Martin's Press, Inc., New York, 1964, pp. 376-386; J. Tinbergen, Development Planning, trans. N.D. Smith, Weidenfeld & Nicolson, London 1967.

These studies show that the main reasons for the economic advantage of the technologically inferior technique over a superior one in most industries in the underdeveloped countries include inefficiencies (in the capital intensive technique) arising from problems of "labour management relations, incentives and scientific management", "lack of managerial ability", "inadequate industrial skill", "institutional arrangements" and "inadequate social overhead facilities". In his survey of selected large and small scale industries in India during the first five year plan - 1951/56, S.D. Thapar (op.cit., p. 166) concluded that the reasons given above contributed to the lower capital-output ratios and the lower capital requirement per worker in the small scale projects (adopting a low degree of mechanisation) compared to the large scale capital intensive type. Also, his survey showed that productivity of labour in the latter technique only showed a slight difference from that of the small-scale projects. See Table 7.25.

These practical problems encountered in underdeveloped countries thus count against the achievement of such objectives as a long run larger share of savings for re-investment, capital accumulation and the maximisation of employment theoretically associated with the choice of capital-intensive techniques in industries in underdeveloped countries. Cf. W. Galenson & H. Leibenstein, "Investment Criteria, Productivity and Economic Development" in The Quarterly Journal of Economics, Vol. LXIX, No. 3, Aug. 1955, pp. 343-370.

II

The importance of low unit cost of production as a means of increasing export output is illustrated by examining some industries which use palm products as raw materials in the major importing countries. By this means it is possible to ascertain the prospects of increased future exports of Nigerian palm products in relation to substitutes and also the possible effect of future imports on Nigeria's revenue from palm products.

The two main uses of palm oil and palm kernels are in the manufacture of soap and margarine. Both products are inputs in the manufacture of the two products, but in different proportions. The major importer of Nigerian palm products is the United Kingdom. The output of these two items - soap and margarine - and their input mix in the United Kingdom industries would therefore illustrate the future import prospects of Nigerian palm products. Between 1955 and 1965, the production of soap in the United Kingdom had declined from 467,000 tons to 348,000 tons.¹ The decline had been accompanied by a reduction in the proportion of palm products used in relation to other substitutes. As shown in Chapter 2, in 1938 the ratio

¹ Commonwealth Economic Committee: Vegetable Oils and Oilseeds, London, H.M.S.O., Appendix II, 1961, p. 210; 1967, p. 237.

of all oils and fats to a unit of soap was .63 : 1, and that of palm oil and palm kernel oil to a unit of soap was .24 : 1. In 1965, these ratios were .62 : 1 and .10 : 1.¹ Whereas the ratio of all oils and fats to a unit of soap has remained relatively constant over the years, those of palm oil and palm kernels have shown a marked decline. These changes in the ratio of palm products used in the United Kingdom soap industries emphasise the preference for substitutes for vegetable oils and fats in the manufacture of soap in the period 1954/65, and hence the drop in import demands for palm products.

The palm kernel oil, which is a lauric-acid oil, is used for a variety of purposes. These include the manufacture of margarine, synthetic detergents, synthetic rubber, soap, and also in confectionery and bakery products.² Its major use in the United Kingdom is, however, in the manufacture of margarine. Like soap, the production of margarine in the United Kingdom had declined since 1955, and this decline in output had also been accompanied by a shift from vegetable oils to marine oils and fats. For example, between 1955 and 1965, the production of margarine declined from 367,000

¹ Ibid., 1967. Ratios calculated from soap production figures, p. 237, and input, Table 13, p. 240.

² See F.A.O. Agricultural Development in Nigeria 1965-1980, Rome 1966, p. 122.

tons to 314,000 tons.¹ In 1955, 309,000 tons of vegetable, animal and marine oils and fats were used in the manufacture of margarine. 91,000 tons of the total vegetable, animal and marine oils and fats used were palm oil and palm kernels oil. Thus while the ratio of all oils and fats to a unit of margarine was .84 : 1, that of palm oil and palm kernels to a unit of margarine was .25 : 1. In 1965, the ratios were .85 : 1, and .08 : 1.² As in the manufacture of soap, although the vegetable, animal, and marine oils and fats input to margarine output ratio had remained about the same between 1955 and 1965, there was a shift from the use of vegetable oils - including palm kernels oil - to marine oils and animal fats.

The shift from vegetable oils to marine oils and fats in the manufacture of soap and margarine in the United Kingdom arises from the comparative world production and prices of substitutes. Table 7.22 shows the average world production and prices of vegetable oils and fats for two periods, 1955-56 and 1963-65. World palm oil production had increased by an average of only 7.4%. The relative scarcity had been reflected

¹ Commonwealth Economic Committee: Vegetable Oils and Oilseeds, London, H.M.S.O., Appendix II, 1961, p. 214; 1967, p. 229.

² Ibid., 1967. Ratios calculated from production figures and input, Table 3, p. 232.

over the period in a price increase of 5.5%. This contrasted with the increased production for marine fats and oils of 26.8% and the accompanying slight drop in price of 2.6%. World increase in production of marine fats and oil, their proximity to European markets and the fall in prices thus favour their substitution for vegetable oils from overseas countries.

Nigeria contributes a substantial share in the production of palm oil and palm kernels to total world production. Between 1954/55 and 1965 her share in total world exports of palm oil and palm kernels was 37.0% and 42.2% respectively - see Table 7.23. If the expansion of her cultivated palm production is accompanied by increased production from plantations in other producing countries, the ultimate world increase may have a depressing effect on world prices.¹ The low prices envisaged may have an advantageous effect on

¹ The F.A.O. expresses the view that "in the 1970's world output of palm oil is likely to increase considerably more rapidly than in the previous two decades. There are ambitious plans for new plantations in the Ivory Coast and new acreage is being planted in Ecuador and Colombia. The degree of success of plans in Nigeria itself will play a leading role in determining the course of world production. The upward trend in Malaysia will probably be accentuated, and there is no technical reason why production cannot be considerably expanded in Indonesia and Congo ... other countries, such as the Philippines, are known to be planning on establishing oil-palm industries." Agricultural Development in Nigeria, op.cit., p. 121. Cf. Bela Balassa, The Trade Prospects for Developing Countries, Illinois, R.D. Irwin, 1964, p. 175.

world demand. Palm products may then compete with marine oils and fats, with a possible improvement in the ratio of palm products to the unit of soap and margarine used in their respective manufacture. The benefit of increased future revenue for Nigeria under the above condition rests on her ability to reduce the unit cost of production so as to make palm products more competitive in the world market for oils and fats. If the government pattern of expenditure in the two plan periods, i.e. her emphasis on plantation production, persists, it is doubtful whether unit cost of production can be reduced appreciably. It is in this respect that the encouragement of local processing, through government loan schemes for the purchase of hand-presses by local farmers and the raising of producer prices provide a hopeful alternative in future export production.

The European ports (c.i.f.) prices for palm products as shown in Table 7.12 have been relatively high and steady over the period 1955/65. Yet over this period there has been a continuous decline in Nigerian palm products export values (Table 1.3); internal revenue (Table 1.8), and announced producer prices (Table 7.11). It is therefore probable that future lower c.i.f. European ports prices - resulting from the prospective increased world production - may lead to even lower revenue and announced producer

prices. The depressing situation over revenue is not likely to be remedied by the internal consumption of palm products in Nigerian manufacturing industries in the foreseeable future. As shown in Table 7.24, between 1959 and 1965 only an average of 7.9% and 6.3% of palm oil and palm kernels respectively were purchased for internal consumption in manufacturing industries from the total quantity purchased for export. Production for export will thus continue to be the major source of deriving revenue from the industry and also of income to the producers. These objectives have been recognised by the government, but the best approach towards their achievement had remained a problem even before the development plan era.

Summary

The major development responsibility for the Nigerian oil palm industry was transferred to the Eastern Nigerian government in 1955 as a result of constitutional changes which transferred the responsibilities of the development of agricultural industries to the regional governments. Because the region was the area of major palm products export production, the industry was regarded as of greatest importance - in terms of expenditure allocation - within the two plan periods 1955/61 and 1962/68 when over 80% of the expenditure on primary production was spent. This high expenditure as compared with that on other primary

products was because it was the most important source of revenue for the government and also the highest single employer of unskilled labour.

Although government expenditure on the industry was higher than the 1949/54 period, there was a decline in export output. Among the factors contributing to the decline in export production were the distribution of expenditure between the two producing sectors - plantation and local producers; the decline in inter-seasonal producer prices; the timing of subsidy payments for cultivation; expansion of internal sales; and the loss of labour time in production consequent upon the social and economic development in the region.

Expenditure on the industry was motivated by expectations of expanding employment opportunity and of increased revenue from export production of palm products. These expectations were not realised. The expenditure on plantation production failed to create as much employment opportunity as would have been the case if the expenditure had been made on local production. And, decline in export output caused a decline in revenue. Future sources of revenue for the government through export production also seem doubtful in view of world demand conditions for vegetable oil and fats. The other alternative, with some promise of increased revenue from export production, is the reduction in unit cost of production

by the greater use of hand-presses in local processing encouraged through such measures as higher producer prices system, and loan schemes for hand-presses.

The expenditure on plantation development and production had failed to generate as much growth in output as was expected. It is therefore in the traditional sector - the major producing sector - that such changes and re-organisation as are conducive to a higher rate of growth, increased revenue, and the deployment of labour can be expected.

Chapter 8

Government Policy and Export Production in the Nigerian Oil Palm Industry, 1906-1965

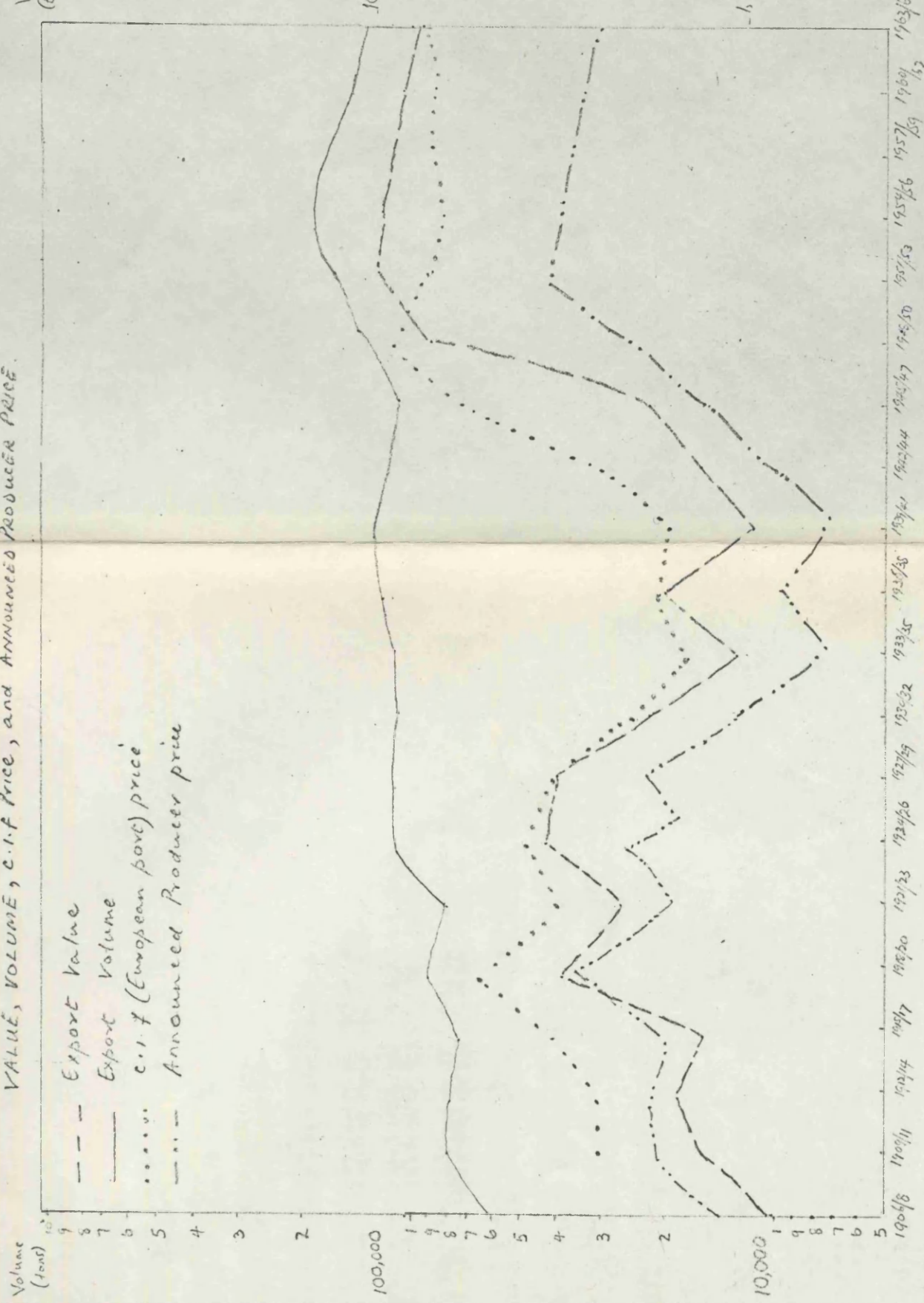
Summary and Conclusion

The central theme in this thesis is the analysis of policy measures taken within three distinct historical periods - 1906/38, 1939/54, and 1955/65 - as they affected the trend in the export volume of Nigerian palm products. From the analysis that emerges suggestions are made as to a practical future policy capable of inducing increases in export output through measures which would encourage an effective utilization of productive resources in the industry.

Early palm products exports were the result of effective demand for the produce obtainable from the latent surplus productive capacity in the industry above domestic requirements. In the period 1906/38 the increased volume of exports was mostly based on the expansion of harvesting acreage from wild groves using traditional methods of processing within areas conveniently located for export sales to foreign merchants. The palm belt was generally characterised by a very favourable ratio of natural resources to population and a low degree of utilization of the potential available labour services - particularly male labour. The input of male labour services was

CHART I PALM OIL EXPORTS.

VALUE, VOLUME, C.I.F PRICE, and ANNOUNCED PRODUCER PRICE.



Semi-Logarithmic Scale

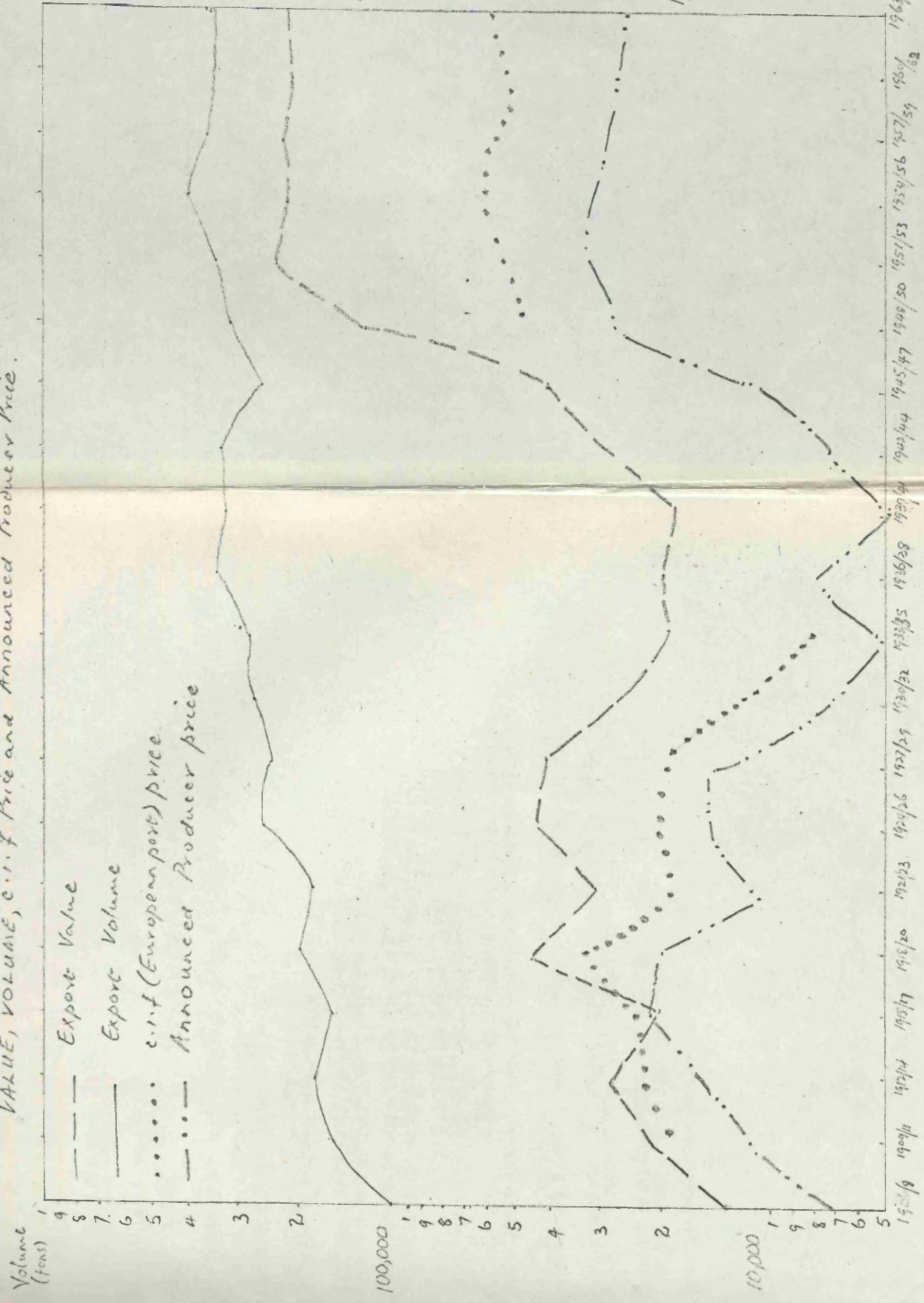
Value
(£'000)

10,000
100

1,000
10

CHART II, PALM KERNEL EXPORTS

VALUE, VOLUME, c.i.f. PRICE and ANNOUNCED PRODUCER PRICE.



Semi-logarithmic Scale

1920/19 1921/20 1922/23 1923/26 1924/26 1925/29 1926/32 1927/35 1928/38 1929/34 1930/34 1931/34 1932/34 1933/35 1934/38 1935/44 1936/44 1937/44 1938/44 1939/44 1940/44 1941/44 1942/44 1943/47 1944/50 1945/53 1946/56 1947/59 1948/55 1949/55 1950/55

constrained at a low level by the institutional restrictions on division of labour between the sexes, the communal land system and the traditional technique of production with constant returns and fairly rigid combinations of factors.

The government accepted this production pattern as offering a sound basis for export growth. As a means of stimulating increased utilization of the available resources, road and rail communications were improved. This improvement in infrastructure was supplemented by more effective administrative control. The expansion of harvesting areas from the river banks and coastal regions led to the observed moderate rate of annual increases in export output over the period 1906/38.

One of the salient features of this period 1906/38, was that fluctuations in export output around the trend increase were slight despite considerable fluctuations in demand (see Charts I and II). European port prices for Nigerian palm products fluctuated in accordance with changes in business activity in the importing countries and with the changes in economic measures adopted by importing countries which directly affected vegetable oil seeds. The observed downward movements in prices from 1929 to 1938 had little observable impact on the Nigerian

export output trend¹ largely because of the rightward shift in the palm products supply curve brought about by extension of the areas harvested, improvement in road communications, and the gradual rise in producers' social and economic obligations over time. The latter arose mainly as a consequence of increases in government obligations, e.g. tax, bicycle licenses; and local social obligations - local dues, church and school building funds, together with increased expenditure on food arising from a continuous decline in soil fertility in the palm belt area. Most of these obligations were fulfilled through payments in palm products, and contributed to the maintenance of a continuous export flow at a moderately increased level over the period.

The establishment of a Statutory Marketing Board in 1949 led to marketing re-organisation, producer price policy and direct investment in plantations. Economic performance in the industry from 1949 to

¹ The Nigerian palm products export trend for 1906/38 differs from those of plantation export crops such as banana where foreign capital investment had revolutionised the traditional organisation and production system. Studies on export crops produced under such a system have shown that their output is more sensitive to external demand and reflects fluctuations in output corresponding to the fluctuations in demand. See e.g. W.A. Lewis and P.J. O'Leary, "Secular Swings in Production and Trade 1870-1913" in Manchester School, Vol. XXIII, 1955, esp. p. 146. Cf. G.L.F. Beckford, "Long-Term Trends in Banana Exports" in Economic Development and Cultural Change, vol. 15, no. 3, April 1967, pp. 323-335.

1954, as shown by annual increases in the export production trend, producer income, government revenue, and export earnings was the best within the three periods. Fluctuations in prices, as observed in the first period, were absorbed by the Marketing Board, and the increase in export output was aided by their pricing policy, their marketing re-organisation and such other factors as increased monetization and modifications of the institutional framework of local resource use.

A consideration of the export production trends, together with the policy measures adopted, shows that the observed increase in export volume between 1949 and 1954 was the result of changes in policy in this period. Important among these policy measures were the introduction and maintenance of interseasonal and intraseasonal guaranteed prices at levels higher than those prevailing in the period 1906/38.

These improvements in the period 1949/54, which coincided with the post-war demand for palm products were short-lived. In the period 1955/65, despite the retention of the basic marketing reforms introduced in 1949, and the substantially increased investment in plantation development, the major reduction in producer prices below the 1949/54 level (at the period when world demand was still maintained at a relatively high level) led to (a) the diversion of export output to the

domestic market, and (b) the diversion of resources, especially labour, from the industry. The modification of producer price policy thus contributed towards the decline in export output in the period 1955/65. These, in outline, were the main economic characteristics of export production in the industry.

Appraisal of the Government's Development Policy for the Industry

Increases in export production of palm products depended on policy measures affecting four essential stages in the industry - cultivation (local and plantation); processing (local and plantation); road, rail and water transport development; and marketing organisation. In the period 1906/38, the limited development policy was mainly focussed on the first three, i.e. research on processing, research on cultivation, and improvement in communications. It was this latter factor - communications - that had the greatest impact in increasing export output. None of these factors had a direct impact on producers or acted as an incentive in inducing increased export output.

In the post-war period, the impetus provided by overseas demand, the need for development and price stabilisation funds, and the opportunity created by the absence of competing countries from the world market during and soon after this war, led to

government measures to re-organise marketing, introduce guaranteed producer price policy, plantation cultivation and processing as well as the further development of the transport system. And from 1955, investment in the industry was higher than that for any other Eastern Nigerian export crop. Policy affecting the industry thus passed through the initial period (up to the beginning of world war II) with hardly any major direct measure aimed at long-term increases in production to the post-war period when price incentive and several other measures affecting improvement in such supply factors as processing, cultivation and marketing were introduced.

What were the defects of policy measures to increase export output and improve product quality throughout the period 1906-65? Crucial among these were (a) inadequate government policy on producers' prices and (b) absence of credit assistance to local producers, especially for the purchase of hand-presses for processing. Inadequate monetary incentive in production was most pronounced in the period 1906/38. This occurred as a result of the government's mistaken view about producers' responses to economic incentive, a view which arose because of their failure to distinguish between producers and middlemen. The government thus ignored the monopsonistic buying practices of the middlemen and accepted that the

organisation of local production and trade, as practised, represented a sound basis for adequate expansion of palm products exports and a relatively costless¹ means of acquiring foreign exchange earnings and government revenue. Since it was considered that monetary incentive was not a necessary means of inducing increases in export output, the government provided research, maintained law and order, and developed communications as a means of inducing further increases in export output.

In the period 1906/38, export output, as shown in Chapter 4 was mostly dependent on the economic motivation provided by the need to satisfy relatively fixed needs such as taxes, foodstuff purchases, and to some extent imported goods. In the absence of known producer prices which would provide an additional generalised incentive to production, the above factors in the short-term set a limit to producers' target production and to increases in individual producer export output. The importance of known producer prices as an essential means of inducing export output increases arose from the fact that export production was carried out within an economy in which the only means of earning money income was in the export production of palm products.

¹ Costless in terms of direct capital expenditure in the industry.

Since it has been shown in Chapter 4 that producers were rational in their economic behaviour and since imported goods were the items on which the producers spent their money income, it can be reasoned that a rise in producer money income through the incentive provided by known and higher producer prices would have encouraged both higher, if limited, increases in export production and more expenditure on imported goods.

One of the government's misconceptions during the period 1906/38 was that the terms on which producers could acquire imported goods were unimportant. It thus ignored the terms on which imported goods were acquired, as shown by the unfavourable terms of trade between imported goods and palm products export output for most of the period 1930 to 1938 in Chapter 4. Secondly, the government failed to introduce marketing reforms which would have bypassed the monopsonistic practices of the middlemen and therefore rendered producer prices an incentive in production.

The second misconception on the part of the government was that the need to acquire imported goods was the main reason for export production. This view arises from the projection of the nineteenth century trading framework on to the twentieth century. In other words, no distinction is made between the framework of trade and production during the very early

inception of trade up to the beginning of the nineteenth century and the period roughly 1910 to 1938. Evidence of early trade before 1910 emphasised the importance of barter trade as an influence on export production. Such trade goods as beads and brass pans, rum, tobacco, muskets, gunpowder and gin were then the "key to unlock many doors" and the "desire for gin to vary the deadly monotony and bad cooking of the native diet stimulated production and trade vastly."¹ Implicit in this trade by barter system was the coercive influence of local coastal chiefs - whose doors were unlocked with gifts - on their subjects to produce palm products for export. The farmers' decision to produce for export was thus not the producers' choice motivated by any incentive measure. From the turn of the century, i.e. the period 1906/14, till 1938 the liberation of producers from the shackles of local chiefs through administrative control presented a different picture. The individual farmer was then able to make an independent choice based either on government demand - in the form of tax - or on the fulfilment of local needs or the acquisition of some imported consumer goods. As was shown in Chapter 4, producers' expenditure on imported goods played a relatively minor role as an incentive in production.

¹ A. McPhee, The Economic Revolution in British West Africa, Aberdeen, Routledge & Sons, 1926, p. 9.

In the period 1949/54 monetary incentive in the form of increased producer prices and grade/price differential was introduced. Evidence of producers' positive responsiveness to this measure was illustrated by both the improvement in the quality of palm oil and increases in the quantity of palm products exported. Defects of government policy at this period were the absence of assistance to local farmers in the improvement of such supply factors as hand-presses for processing and also the lack of assistance in the cultivation of improved seedlings with higher yield. For instance, throughout 1949/54 policy was strongly against a loan scheme for local producers in the purchase of hand-presses - the main means of increasing export output by small farmers. In cultivation, the development of plantations, as opposed to small-scale cultivation by farmers, was preferred by the government. Plantation development brought only negligible changes because it neglected the mass of producers in the industry.

In the last period, i.e. 1955/65, monetary incentives in cultivation in the form of subsidies were introduced. This innovation was ineffective in inducing export output increases because other factors, including a reduction in producer prices plus the introduction of a producer sales tax ensured that expanded cultivation was at the expense of export

processing. The continuous deterioration in producer prices and in income derived from palm products exports at this period, contributed to the diversion of resources, particularly labour, from the industry, and led to the observed decreases in export output and the increased sales in the home market in the period 1955/65.

In considering the three periods, 1906/38, 1939/54 and 1955/65, it is clear that the policy measures applied never simultaneously provided both price incentives to expand production and improved supply conditions within the major producing sector. In the second period, 1939/54, the high annual increase in export output was associated with the guaranteed high producer prices. In the period 1955/65 the reduction of producer prices, although accompanied by the introduction of cultivation incentive, caused a decline in export output.

An important factor which accounted for the absence of adequate incentives and financial assistance to small farmers in processing and cultivation was the emphasis placed on the introduction of plantation cultivation and processing from 1949 to the end of the period.

The main defects of the introduction of plantation cultivation in the short run arose from the nature of investment in the sector. Investment committed to

plantation development was irreversible and could not be quickly adjusted to fluctuation in export demand.¹ This irreversible process, arising from the initial heavy investments required in plantation development, was initiated by short-run expanding world demand in the period 1949/54. The decline in world demand in the period 1955/65 did not however produce a decline in plantation output. In other words, as the high demand which first motivated changes in the supply conditions was not maintained, the irreversible process in plantation supply conditions kept supply at the level initially generated by changes in supply conditions. Thus, irrespective of whether overseas demand was high or low, increased quantities of plantation products - produced at a comparatively high cost per unit of output - flowed into the export stream. Policy preference for plantation development did not only result in high unit costs of production but also in inefficient resource utilization.

¹ W.A. Lewis and P.J. O'Leary, and H. Myint have shown that the irreversible nature of such investment in primary export production which could not be adequately adjusted to changes in external demand is the underlying factor influencing the inelastic supply of such primary products and the consequent loss of earnings from export sales during periods of low external demand. W.A. Lewis & P.J. O'Leary, op.cit., p. 137; H. Myint, op.cit., pp. 317-337.

Suggested Recommendation

The essential cause of the change in overseas demand in the period 1955/65 was the increased use of substitutes with lower prices - especially animal fats - in the manufacture of products such as soap and margarine in which palm products were major inputs up to the mid-1950's (especially in the United Kingdom - the major market for Nigerian palm products). As a result of the increased preference for substitutes with relatively lower prices, it has been concluded by some observers that there is no future for the industry in the export market.¹

The defects of such a conclusion arise mainly from an insufficient regard to both the factors affecting overseas uses of palm products and conditions governing export production in the Nigerian oil palm industry. The essential determinant of future overseas demand is the level of palm products prices as compared with those of substitutes. If, as estimated by the United Nations Food and Agricultural Organisation (from their survey of other producing areas), the future world production trend is towards greater increases in the world production of palm products relative to demand,²

¹ Cf. S.U. Ugho, "Prospects for some Nigerian Agricultural Products in the World Market" in The Nigerian Journal of Economic and Social Studies, vol. 7, no. 3, Nov. 1965, pp. 237-243, esp. p. 243.

² F.A.O. Agricultural Development in Nigeria 1965-1980, Rome 1966, pp. 120-122.

the chances are that world prices for palm products will decline relative to prices of substitutes - provided that there are no drastic changes in the prices of substitutes, which the F.A.O. studies suggest will be the case¹ - to the extent that the use of palm products in the input mix in the manufacture of soap and margarine and other products may well increase.

Assuming therefore that world prices decline as a result of increases in export production from all producing areas, the essential determinant of possible Nigerian gains from export production is the reduction in the unit cost of production and the possibility of a higher rate of increase in the quantity of products exported. Policy measures adopted from 1949 to 1965 with the objectives of increasing production and reducing its cost have been directed mainly towards investment in plantation export production. This approach, contrary to expectations, has resulted in a high unit cost of production and a relatively low rate of growth in export output. The problem of the future development of the industry in relation to future world demand is essentially associated with correcting deficiencies in existing policy, in particular the lack of encouragement to family production resulting in the expansion of domestic

¹ Ibid., p. 121.

sales and the failure to retain the appropriate labour force within the rural producing sector. The solution lies in measures which would improve the level of the income of the producers relative to unskilled labour wages in the other private and public sectors.

What has emerged from this analysis is the need for a change of emphasis along the lines suggested above. That is, that emphasis which has been placed on investment in plantations should be modified in favour of organisational changes and incentive measures designed to increase local family production and further to mobilize existing resources in the rural sector (the producers of over 95% of the palm product exports).

The prospects of future cost reduction and of increased export production within rural family producing units in the industry depend upon two related groups of measures. Firstly, measures aimed to organise and encourage individual or group ownership of small processing plants. Secondly, incentive measures such as the payment of a higher proportion of announced producer prices relative to f.o.b. prices, the abandonment or reduction of produce purchase tax and the continuation of subsidies for cultivation. In considering the possibility of reducing unit cost by the encouragement of investment in family unit processing plants, as opposed to that of public corporation investment in mill processing, such savings

as managerial cost, unskilled labour wage cost, expenditure in the purchase of fruits from local farmers and other added expenditure on the running of plantations tilt the scale in favour of processing by family units. Furthermore, the small size of the hand-presses and the small scale of a single family operation ensure against major losses during off-peak and slack seasons at the mills.

The effective organisation of the distribution of the machines to producers is a necessary condition of their actual operation as a cost reducing measure. The system of direct cash loans to farmers with adequate security against default in payment, as was practised with respect to other agricultural and industrial projects by the Corporation in 1955, is ineffective for two reasons. Firstly, a majority of the family producing units are unlikely to be able to offer the required securities. Secondly, the temptation to divert the funds so provided to other uses is undoubtedly great in a community with low incomes. A workable alternative, when considered in the light of the social framework of the producing units is the hire purchase system arranged by government agents without an initial "down payment"

before the machines are supplied.¹ The organisation of a repayment system for the machines by a government agency should operate through proportional deduction from monthly sales based on a predetermined percentage of the prevailing annual producer prices. The system ensures against defaults of payment as well as the maintenance of announced producer prices at a level that would not discourage production after the deduction of the monthly payment for the hand-presses. Furthermore, the arrangement promotes individual or group investment by family units who would not otherwise be able to accumulate adequate funds for the purchase of hand-presses. Reduction of unit cost in production, therefore, may be brought about by the greater use of family labour in gathering fruits from communal wild groves; improved output per unit of fruit through the use of hand-presses; savings arising from the small-scale operation of the machines during slack seasons; savings in managerial expenditure and other overheads; and reduced labour cost in processing. Finally, the high standards in

¹ An analogous traditional system to the proposed hire purchase is the familiar mortgage system with palm groves. Instead of the Western conveyance of property as security for debt until money is repaid, the palm products producer in most parts of E. Nigeria who mortgages his land, calculates his creditors' earnings from the sales of palm products from the land on the basis of a negotiated sum, as part payment for his debt. The land reverts to the debtor on final deduction of such sum plus some agreed amount as interest.

palm oil quality shown by hand-press processed export oil of the period 1949/65 would be maintained.

Measures adopted to reduce unit cost of production within family producing units, as discussed, are not by themselves a sufficient guarantee of increased production unless accompanied by additional incentive measures introduced to encourage increased participation of unskilled rural labour in production. Important among these incentive measures are the combination of favourable producer price policies with appropriately timed cultivation subsidies and the abandonment or reduction of produce purchase tax. In the analysis of productive motivation in the rural sector it has been observed that local farmers responded favourably to both grade/price differentials and to cultivation through subsidies payment. It follows therefore that by introducing these measures the expected improvement in producers' income would, by itself, encourage greater use of local labour and therefore raise export production.

The success of these measures in stimulating export production depends in part on the prospects of narrowing the gap between unskilled labour money wages in the other industries and in the public sector, and money earnings from the export production of palm products, in order to minimise the migration of the 18-30 age group labour force from the villages and

thus from local export production. The 1962/68 development plan and the expenditure associated with the various projects, plus the development of other private enterprises since the early 1960's have created conditions favourable to the employment of the crucial labour age group in other sectors of the economy at wage levels far above the conceivable money income of similar labour in rural palm production for export. Development and education policies which favour the employment and raise the expectations of this labour age group, particularly young school leavers, have confronted the government with the problem of how to retain agricultural labour in the rural sector. The migration of this class of male labour, if unchecked, results in a scarcity of labour in the harvesting of fruits - an essential determinant of palm oil export output.

A policy which seeks to minimise the physical transfer of the migrant labour age group - 18-30 - through measures such as recommended above,¹ enables a greater marketable surplus of palm products to be produced, while, at the same time, it minimises urban unemployment.² An analogy with the proposal to

¹ The above recommendation on narrowing the gap between wages and money earnings from palm products exports is valid only if effective restraint is placed on possible wage increases in organised industries and in the public services.

² This has the added advantage of delaying the trend towards urbanisation with its associated costs.

encourage investment and retain labour within the rural family unit of production whilst at the same time narrowing the wage/money income gap, can be drawn from the experience of Japan. Apart from her political framework which unquestionably favoured a higher rate of capital formation, relative to the prevailing level of consumption, a dynamic impulse to the substantial lowering of the wage differential between the rural and the urban industries during the labour intensive phase of Japan's industrialisation (1868-95), was the mobilisation of under-employed labour, for the most part within the confines of the rural economy. The integration of industry into the rural way of life delayed the trend towards urbanisation. Also the dispersal of industrial labour in small enterprises scattered over the countryside, had a decisive influence on the character of the labour market. By enabling employers to practise wage discrimination between industries, the overall differential between rural and urban wage rates was minimised and a large expansion of employment became possible at wage levels more or less tied to the existing levels of remuneration on the land.¹

¹ Gustav Ranis "Factor Proportions in Japanese Economic Development", A.E.R. September, 1957, p. 602.

In the search for a fundamental cause of the rural labour shift, income differentials have been singled out as the crucial determinant influencing movement of the essential labour age group and the decline in rural processing for export. While the income differential is important, it is also conceivable that communal activities such as digging wells for water supply may alter the social and economic environment within which local labour operates and provide an effective indirect advantage which would compensate for the income differential. The problem for policy is therefore one of encouraging that type of social and economic framework which, in addition to the incentives discussed, utilizes non-monetary incentives to employ the maximum of (unpaid) local labour. The community development type of approach would foster and recreate a type of organisation to accommodate labour participation in projects related to export production in the rural agricultural areas. The advantages of such a policy are obvious. Because of an identity and merging of interests arising from the communal pattern of social existence, community establishment and ownership of such projects as wells and access roads to wild palm groves automatically guarantee to every individual recoverability of the proceeds of his effort. Thus farmers who devote their labour gratuitously to digging wells for water supply

to be used for processing or to erecting communal processing plants, in effect pay themselves on completion by directly appropriating the resulting benefit. In the same way a government in advanced societies might defray the cost of, say, a railway line and then recoup itself from the appreciation of land values in its district.

Thus, given the prevailing wage rates in other enterprises, policy measures which either directly or indirectly increase the income of rural producers, impose a reasonable limit to the possible migration of the most important adult male rural labour force for wage employment. What is important from the standpoint of reducing cost and increasing production through policy measures, is not only the absolute size of investment - as in the plantations and mills - but also the method by which this fund can be effectively utilized within the appropriate sector. Whereas the size of the investment fund for development is relatively limited, and its increase is partly a function of external demand and domestic savings, there is no economic barrier to the judicious manipulation of investment into the appropriate channels.

The recommendation based on the hire purchase system for processing machines as a source of finance for farmers' investment, and a better government

producer price policy, may also be valid for general application in underdeveloped countries where lack of capital is a hindrance in rural (producer dominated) export production of primary products. Capital expenditure on local farm items such as the purchase of equipment, land, livestock; and expenditure on land improvement measures, minor irrigation, and levelling could be supplied direct by the government on hire purchase terms (as opposed to loans). The periodical recovery of the capital expenditure by an organised government buying and marketing establishment would in itself incorporate safeguards in pricing policy as well as in production in a manner which would encourage future export production. Furthermore, in countries where money-lenders and landlords receive high interest rates from farmers for loans for the purpose of rural agricultural capital expenditure,¹ the hire purchase system becomes a safeguard against farmers' exploitation.

To conclude, the central problem of palm product export production in the Nigerian economy from 1906 to 1965 has been the extent to which policy measures have

¹ See e.g. Dr. Horace Belshaw, Agricultural Credit in Economically Underdeveloped Countries, F.A.O. Rome 1959, p. 61, where Dr. Belshaw showed that "a sample enquiry in villages in Lebanon in 1953 showed the following average rates: official banks, 6.9 per cent; other banks, 18.5 per cent; money lenders, 22.4 per cent; landlords, 24.0 per cent ... In other countries, the Beirut meeting was advised of rates varying from 20 per cent to 40 per cent."

provided adequate and appropriate production incentives and supply facilities to producers. The analysis has suggested serious deficiencies in this respect and advanced proposals, which may also be applicable to other developing countries, to remedy these weaknesses.

Appendix 1.1

The indigenous method of preparing soft oil was described by J.E. Gray, the botanist, as follows

"A sufficient number of bunches of fruit having been brought in from the trees, each is chopped up into forty or more parts by cutting off the small fruit stalks from the large central woody one, which is then thrown aside. The fruit, firmly attached to the smaller stalks, is left in a heap from two to four days at the end of which time it will all have become loose and may be readily picked out. Subsequent operations are as follows:-

- (a) The fruit is placed in large pots of a capacity of about $1\frac{1}{2}$ bushels and in these, sufficient water having been added to cover the fruit, it is boiled for about 4 hours until, on taking a single fruit between thumb and finger, slight pressure will cause the pulp to come away from the nut. The fruit is then left in the pot from 1 to 3 days. It is said that if the extraction is proceeded with immediately, less oil will be obtained. Usually three pots are placed together, for boiling, and a fire placed between them.
- (b) The fruit is next thoroughly pounded in a wooden mortar, holding about half a bushel at a time, and this operation is complete when all the pulp has been crushed off the nuts.
- (c) The pulp and nuts are now thrown into a circular pit, the sides and bottom of which have been rendered impervious to water by a coating of cement or mud. This pit is approximately 3 ft. in depth, the diameter at the bottom is about 3 ft., and at the top 4 to 5 ft. The pit is half full of water, to the top of which the oil rises, aided by stirring, and taking up water in a calabash and letting it fall back into the pit. The bulk of the oil, which is now frothy and chrome coloured, having risen to the surface, is skimmed off by hand or calabash and transferred to a smaller pot than the one used for the original boiling.
- (d) The fibre is next sifted out from the water and nuts in the pit; the nuts themselves are taken out and spread out to dry, and the yellowish water in the pit is thrown away.

- (e) The oil which has been placed in the small pot, is now brought to the boil, when much of the water and all the fibre which has been unavoidably skimmed off with it, sinks to the bottom, and the oil, which is now clearer and quite dark, is skimmed off again and heated in a still smaller pot, or the shallow, broken piece of a larger one.
- (f) This final operation is known as 'frying', the object being to refine the oil by evaporating the last traces of water. This is considered to have been effected when sprinkling a little water on the surface of the oil causes a crackling noise, with rapid evaporation of the water.

The above is a general description of the method of preparing soft oil, and although in some parts the process may differ slightly, the principle is the same. The whole is performed by women.¹

The time taken by the women for the extraction of one ton of oil as estimated by Mr. Gray was 120 hours².

The preparation of Hard Oil and the comparison between the preparation of Soft and Hard Oil

"The process about to be described, is practised in the Sapele district. While details may vary from place to place, there is no reason to suppose that all Hard Oil Extractions are not fundamentally the same.

1. When the bunches have been harvested they are stored under cover from 7 to 14 days. The object of this storage, like that in the Soft Oil process, is to loosen the fruits from their stalks; but whereas, in the latter instance, the bunches are immediately chopped and the woody axis removed, in the former this only occurs in the case of a few bunches which may have been brought in later than the main bulk. Thus the loosening of fruit in the Hard Oil process is brought about by storage alone, while in the preparation of Soft Oil labour is involved to accelerate the freeing of the fruits from their stalks. The increased period of storage of whole bunches does not greatly affect the F.F.A. content, as has already been stated.

¹ J.E. Gray, "Native Methods of Preparing Palm Oil" in Nigeria, First Annual Bulletin of the Agricultural Department, 1st July 1922, pp. 30-31.

² Ibid., p. 48.

2. At the end of the storage period, each bunch is taken and given a few sharp blows with a stick. This is sufficient to cause ripe fruits to fall out, surrounded only by the chaff. Unripe and over-ripe fruits are rejected at this stage. The fruits, with their small amount of adherent rubbish, are transferred to a mat supported on a raised frame-work of convenient height. The mat is made of parallel slats cut from the midrib of the palm leaf. The slats are sufficiently close together to prevent the fruit falling through. Working by hand rapidly separates the clean fruit from the chaff and other rubbish. In comparison with the Soft Oil process there is again a saving of labour. The chopping of the bunches and the subsequent laborious picking over of the clusters is dispensed with; and a few knocks with the stick and a rapid working on a sieve is substituted. The sifted fruit is now transferred to a trough or dummy canoe situated, almost invariably, at the waterside. The canoe has a dug-out 'keel' about 8" across, and the sides are built up of split logs caulked with fibre. The ends are usually wattled. The whole measures from 12' to 14' in length, from 2½' to 3' in depth, and is 3' across at the top narrowing to 8" at the bottom. The keel is sloping, one end being about 9" higher than the other. A bunghole is provided at the lower end and this is stopped with fibre when not required. Protection from the weather is given by an awning of palm leaves, of sufficient height to enable a man to stand upright in the canoe beneath it. Here the fruit is piled at the lower end, sprinkled with water at the rate of about half a gallon per 100 lb of fruit, carefully covered with leaves and mats, and left overnight.
3. On the following morning the covering is removed and the first extraction process is commenced. This consists of treading the fruit with the feet, when the pulp which has been softened by the night's fermentation is separated from the nut. The water added overnight assists fermentation and is apparently absorbed by the fibre as none of it adulterates the oil which is subsequently expressed. The mashing or treading is done by two or three men standing in the canoe and supporting themselves by a stick in either hand. A quantity of fruit is shovelled into the bottom of the empty (higher) end of the canoe, and, keeping about 9" of fruit beneath the feet, the men commence treading. The whole weight of a man's body is brought to bear in a downward thrust with one foot. After each thrust the

foot is twisted sideways in a stirring motion. The mashed fruit is shovelled to the high end and a fresh supply is pushed into the bottom. When all the fruit has been mashed it is shovelled to the low end and the process repeated. Two bushels having undergone remashing, are packed tightly in the high end, a pole about 2' 6" long and 3" in diameter having first been placed in the bottom of the canoe, so that the pulp is placed above it. When more fruit has been treated it is banked against the first and the pole drawn forward slightly. Thus, as the mashing becomes complete, the pulped fruits are tightly packed in the high end, while at the bottom of the pile is a 3" channel made by the progressive withdrawing of the pole. The pulp is then covered carefully and left overnight. In the morning a quantity of oil is found to have collected in the lower end of the canoe. The pulp has now reached a temperature of over 50°C and steams freely on exposure. The heat of fermentation has been sufficient to free the oil which has percolated to the low end through the channel. This oil is a thick claret coloured fluid, it contains no water, and in collecting, any trace of fibre is removed. It is given no further treatment.

4. Presumably in order to avoid lowering the temperature and thereby checking fermentation, warm water is sprinkled on the mass at the rate of about one quart per 100 lb. of fruit. Mashing then continues as before, and again the pulp is packed into the high end, and a drainage channel left at the bottom by the use of the pole. The whole is again covered and left overnight. Next more oil is found at the lower end. In appearance it resembles that from the first mashing, but is only about half the quantity. Again it is regarded as pure oil, and no further process being considered necessary, it is added to that obtained from the first mashing. This concludes the expression phase. The remainder of the oil is extracted in two stages by the aid of water.
5. The first stage consists of washing the semi-freed oil into the channel with hot water. About 1½ gallons per 100 lb. of fruit are added to the top of the pile of pulp, and in percolating through, the hot water carries with it oil which had not previously reached the channel. The oil collects on the surface of the water in the lower end as a claret layer. It is pure, but in skimming a small quantity of water is scooped up, and to remove this the oil is fried.

6. The pulp contains a considerable quantity of oil which has not been freed in the pure state by fermentation and pressure. This is recovered by a process closely resembling the extraction of Soft Oil in the pit. The pulp is divided roughly into 200 lb. lots. The first lot is shovelled into the lower end and about 40 gallons of cold water added, 10 gallons at a time. The pulp is thoroughly mixed with the water and of course cooled by it. A small quantity of fibre is thrown on to the surface, this being alleged to make the oil thicker. The pulp is worked by hand just as in the Soft Oil process and a similar yellow scum rises to the surface. This is skimmed off into an iron pot. When the extraction of the first lot is considered complete, the nuts and fibre are removed and the water liberated through the bung-hole. (It is doubtful if this waste of water is necessary and probably it would not occur had the water to be carried for any distance. The addition of fresh water, however, naturally cools the pulp more effectively.) Successive lots are similarly treated until the whole available scum has been collected. This resembles, in all outward respects, that obtained from the Soft Oil pits. Like that, too, it is boiled and stirred, but whereas the Soft Oil is skimmed off and fried, the latter process is dispensed with in Hard Oil making. Instead, the hot contents of the boiling pot are poured through a doubled strainer into a shallow iron pan. The liquid having passed through, the mats are doubled upon the residue and pressed with the foot, to insure no waste of oil. The liquid in the pan consists of pure oil floating on a yellowish bottom layer. There is practically no water present and frying is considered unnecessary. The oil is therefore carefully skimmed and added to that already obtained.

In comparing the various extraction processes with the corresponding stages in Soft Oil production, it will be seen that there is a great saving of labour in favour of the method just described. Instead of boiling the fruit prior to depulping, the necessary softening of the pulp is obtained by fermentation. Pounding in a mortar is replaced by the slightly more laborious process of treading, but this is more than compensated for, by the fact that the oil, thus expressed, receives no further treatment. The water extraction stage in Hard Oil making resembles that of Soft Oil, except that the quantity of oil to be dealt with is much less and consequently less boiling is required. There is thus a great saving of wood in favour of the Hard Oil process.

The quantity of water normally used in the two preparations is actually about the same, viz. about 400 gallons per ton of fruit. In the Hard Oil process, however, this quantity could, and would, be reduced to less than 150 gallons, were it not for the fact that the labour entailed in drawing water is negligible, the canoe being situated at the water side. It is a curious fact that the native does not appear to realise, or if he realises, for some reason cannot avoid, the extra labour involved in carrying water for Soft Oil extraction which might be eliminated by digging the pits near a stream." ¹

¹ O.T. Faulkner & C.J. Lewis, "Native Methods of Preparing Palm Oil - II" in Second Annual Bulletin of the Agricultural Department, 1st July, 1923, pp. 6-10.

APPENDIX 2.1

I. Base Year Weighted Price and Quantity Indices for Palm Oil and Palm Oil Substitutes.¹ Average 1911/13 compared with average 1924/28.

Year	Index of palm oil prices (1)	Composite Price Index of substitutes (2)	Relative Price Index of palm oil Col 1 as % Col 2 (3)	Palm oil quantity Index (4)	Composite quantity Index of substitutes (5)	Relative quantity Index of palm oil Col 4 as % Col 5 (6)
Av. 1911/13	100	100	100	100	100	100
Av. 1924/28	122	104	117.3	134.3	678.1	19.5

II. Base Year Weighted Price and Quantity Indices for Palm Oil and Palm Oil Substitutes, 1929 - 1936

Year	Index of palm oil prices (1)	Composite Price Index of substitutes (2)	Relative Price Index of palm oil Col 1 as % Col 2 (3)	Palm oil quantity Index (4)	Composite quantity Index of substitutes (5)	Relative quantity Index of palm oil Col 4 as % Col 5 (6)
1929	100	100	100	100	100	100
1930	69.2	78.2	88.5	84.2	89.2	94.4
1931	51.1	66.0	77.4	82.5	100.0	82.5
1932	50.2	69.0	72.8	86.0	104.1	82.6
1933	43.8	51.8	84.6	108.8	107.2	101.5
1934	38.1	44.7	85.2	154.4	101.8	151.2
1935	57.7	62.4	92.5	145.6	126.2	115.4
1936	59.5	71.1	83.7	208.8	134.6	155.1

Sources and Notes

I Sources (i) Figures calculated from Tables 2.8 and 2.3.
 Column (2) Weighted aggregate price index of substitutes calculated by using the Laspeyre's formula $\frac{\sum p_1 q_0}{\sum p_0 q_0}$

where p_1 represents price at given year period - 1924/28 - and p_0 price at base year period - 1911/13. q_0 represents quantity at base year period - 1911/13.

Column (3) Column (1) as % Column (2)

Column (5) Weighted aggregate quantity index of substitutes calculated by using the formula $\frac{\sum p_0 q_1}{\sum p_0 q_0}$

Sources Column (6) Column (4) divided by Column (5)
(cont'd.)

Note: 1. The composite price and quantity indices are those of
copra, groundnuts and palm kernels.

Appendix 6.1.

The calculation of the difference between producer earnings by hand-press processing method and traditional method is as follows.

The tonnage of palm fruit processed is taken to be 100 tons of fruit. Since the total oil content in the Nigerian fruit, as given by the Research station, is 19%¹ of the fruit weight, and since 65% of the proportion, is recovered by hand-press and 55% by traditional method,² the actual percentage of the oil content of the fruit weight recovered by the hand-press is 12% and that by traditional method is 10%. Therefore 12 tons and 10 tons of oil will be recovered by the hand-press and traditional methods respectively from 100 tons of fruit.

On the basis of the ratio of the grades of palm oil purchased in 1954 (see Table 6.8) - Special Grade (61); Grade I (30); Grade II (4); Grade III (5), the proportion of the grades of palm oil produced by hand-press is determined. These are Special Grade (7.3); Grade I (3.6); Grade II (.5); Grade III (.6). These proportions add up to the 12 tons produced by hand-presses from 100 tons of fruit.

The producer price used is the average price per grade for 1949/54 (see Table 6.5), and the derivation of income per grade is shown in the table below.

Estimated Money Earnings from 12 Tons of Palm Oil
Processed by Hand-Press 1949/54

Grades	Tonnage Produced Per Grade	Av. producer price per Grade 1949/54 £/ton	Estimated total Earnings £
Special Grade	7.3	68.9	503.0
Grade I	3.6	51.6	185.76
Grade II	.5	41.2	20.6
Grade III	.6	33.75	20.3
	<u>12</u>		<u>729.66</u>

The estimated earnings from 12 tons of palm oil processed by hand-press is £729.7; and earnings per ton is £60.8.

¹ See Table 6.12, note 2.

² See Chapter 6, p. 175.

In traditional processing the level of free fatty acid - over 26%¹ - means that all the 10 tons produced were of Grades IV or Grade V. Since there is no means of ascertaining the proportion of the two grades produced, the average price for both grades is used in estimating the income as shown below.

Grade	Tonnage Produced	Av. producer price per grade 1949/52 £	Av. producer price grades IV & V 1949/52 £	Estimated total earnings £
IV } V }	10	29.8 26.25	28.025	280.25

Estimated total earnings per ton £28.0

¹ See O.T. Faulkner & C.J. Lewis, "Native Methods of Preparing Palm Oil" in Nigeria: Second Annual Bulletin of the Agricultural Department, 1st July, 1923, p. 4.

1906-1938

Year	Value of Total Dom. Exports	Export Value of Palm Oil	Export Value of Palm Kernel	Export Value of Palm Products	Col 4 as % Col 1
	£ (1)	£ (2)	£ (3)	£ (4)	(5)
1906	2,951,000	1,001,648	1,193,939	2,195,587	74.4
1907	3,863,000	1,313,960	1,658,295	2,972,255	76.9
1908	3,059,743	1,154,933	1,424,595	2,579,528	84.3
1909	3,848,024	1,447,163	1,815,967	3,263,130	84.8
1910	4,968,595	1,742,234	2,450,814	4,193,048	84.3
1911	4,961,330	1,696,876	2,574,405	4,271,281	86.1
1912	5,296,601	1,654,933	2,797,411	4,452,344	84.0
1913	6,082,171	1,854,384	3,109,818	4,964,202	81.6
1914	6,420,461	1,571,691	2,541,150	4,112,841	64.1
1915	4,946,228	1,462,162	1,692,711	3,154,873	63.8
1916	6,029,546	1,402,799	1,739,706	3,142,505	52.2
1917	8,602,486	1,882,997	2,581,702	4,464,699	54.9
1918	9,511,971	2,704,446	3,226,306	5,930,752	62.3
1919	14,675,789	4,245,893	4,947,995	9,193,888	62.6
1920	12,241,871	4,677,445	5,717,981	10,395,426	84.9
1921	9,182,057	1,655,914	2,831,688	4,487,602	48.8
1922	8,936,202	2,676,241	2,809,655	5,485,896	61.3
1923	10,885,136	2,982,488	3,740,852	6,723,340	61.8
1924	14,460,930	3,944,340	4,461,482	8,405,822	58.4
1925	16,962,995	4,166,096	4,937,450	9,103,546	53.3
1926	16,538,931	3,616,159	4,440,452	8,056,611	48.7
1927	15,470,051	3,617,332	4,574,191	8,191,523	53.0
1928	16,927,295	3,751,484	4,323,114	8,074,598	48.3
1929	17,581,126	3,767,301	4,264,850	8,032,151	45.7
1930	14,777,883	3,250,413	3,679,166	6,929,579	46.8
1931	8,553,354	1,540,797	2,132,162	3,672,959	42.9
1932	9,279,082	1,462,478	2,696,068	4,158,546	44.8
1933	8,460,324	1,384,431	1,898,522	3,282,953	38.8
1934	8,500,435	885,400	1,590,646	2,476,046	29.1
1935	11,196,595	1,656,159	2,245,004	3,901,163	38.8
1936	14,685,928	2,078,838	3,637,396	5,716,234	39.0
1937	19,242,197	2,368,924	3,647,717	6,016,641	31.2
1938	9,285,546	981,330	2,168,366	3,149,696	34.0

Sources: Columns (1)-(4)

- (i) Colonial Reports, S. Nigeria 1907-1913, Nos. 583, 665, 695, 735, 782, 825; pp. 13, 7, 7, 7, 8, 10 respectively.
- (ii) Colonial Reports, Nigeria 1914-1919, Nos. 878, 920, 1008, 1030, 1064; pp. 7, 9, 4, 4, 5 respectively.
- (iii) Blue Book, Nigeria, 1920, Sect. 20.
- (iv) Colonial Report, Nigeria, 1927, No. 1384, p. 19.
- (v) Blue Book, Nigeria, 1930, 1932, 1937, 1938, pp. 374, T. 15. T. 16. T. 16 respectively.

Table 1.2

Export Value of Palm Products as Proportion of Total Domestic Export
1939-1954

Year	Value of Total Dom. Exports £ (1)	Export Value of Palm Oil £ (2)	Export Value of Palm Kernel £ (3)	Export Value of Palm Products £ (4)	Col 4 as % Col 1 (5)
1939	10,202,806	929,704	1,872,504	2,802,208	27.5
1940	11,231,968	1,099,038	1,499,738	2,598,776	23.1
1941	13,124,479	1,046,760	2,283,469	3,330,229	25.4
1942	13,696,141	1,427,340	2,458,222	3,885,562	28.4
1943	14,320,031	1,586,690	3,117,281	4,703,971	32.8
1944	16,202,666	2,029,511	3,636,569	5,666,080	35.0
1945	17,185,183	1,894,005	3,496,464	5,390,469	31.4
1946	19,239,476	2,050,855	4,160,262	6,211,117	32.3
1947	25,895,510	3,241,936	6,203,944	9,445,880	36.5
1948	27,759,413	3,880,653	6,262,253	10,142,906	36.5
1949	61,142,761	11,910,091	16,912,575	28,822,666	47.1
1950	66,778,217	12,072,052	16,693,636	28,765,688	43.1
1951	81,514,980	12,948,943	20,059,297	33,008,240	40.5
1952	92,315,545	17,091,022	22,766,969	39,837,991	43.2
1953	90,912,896	13,019,744	22,184,668	35,204,412	38.7
1954	146,236,957	13,431,178	22,790,982	36,230,998	24.8

Sources: (i) Columns (1)-(3): Nigerian Trade Reports 1939-1955.
The pages for the respective yearly issues are 52,
130, 115, 115, 115, 115, 115, 113, 118, 113, 120,
121, 128, 126, 129, 154.

(ii) Column (4): Column (2) + Column (3).

Table 1.3

Export Value of Palm Products
as a Proportion of Total Domestic Exports 1955-1965

Year	Value of Total Domestic Export £'000 (1)	Export Value of Palm Products £'000 (2)	Col 2 as % Col 1 (3)
1955	129,816	32,347	25.7
1956	132,261	35,306	26.7
1957	124,177	31,760	25.6
1958	132,791	33,113	24.9
1959	160,505	39,779	24.8
1960	165,619	40,044	24.2
1961	170,067	33,117	19.5
1962	164,013	25,824	15.7
1963	156,970	30,183	19.2
1964	177,038	31,717	17.9
1965	225,495	40,132	17.8

Source: Columns (1) & (2)

(i) Annual Abstract of Statistics 1964,
pp. 67 & 86.

(ii) Nigeria, Economic Indicator, Vol. 2,
No. 3, March 1966, p. 20.

Table 1.5
Contribution of Palm Products to Total Nigerian Export Duty

1917-1938

Year	Total Export Duty £ (1)	Export Duty on Palm Oil £ (2)	Export Duty on Palm Kernel £ (3)	Total Export Duty on Palm Products £ (4)	Col 4 as % Col 1 (5)
1917	339,639	127,510	183,602	311,112	91.4
1918	490,917	172,833	230,824	403,657	82.2
1919	662,125	202,312	247,632	449,944	68.0
1920	837,853	240,404	436,172	676,576	80.8
1921	606,009	158,314	311,286	469,600	77.4
1922	755,507	262,837	357,863	620,700	82.2
1923	842,263	285,597	415,478	701,075	83.2
1924	685,643	254,174	284,454	538,628	78.6
1925	707,457	256,237	306,990	563,227	79.6
1926	569,279	175,827	280,579	456,406	80.2
1927	554,301	169,859	289,380	459,239	82.8
1928	584,757	190,664	277,503	468,167	80.3
1929	623,337	197,767	282,972	480,739	77.1
1930	596,019	194,106	278,201	472,307	79.3
1931	435,430	141,817	229,111	370,928	85.2
1932	501,208	139,285	278,231	417,516	83.3
1933	460,132	154,433	233,950	388,383	84.4
1934	474,319	131,086	248,536	279,622	80.0
1935	366,667	82,846	164,707	247,553	67.5
1936	408,791	93,583	202,762	296,245	72.5
1937	402,461	83,016	177,315	260,331	64.7
1938	358,295	62,726	163,823	226,549	63.2

Sources: Columns (1)-(3):

- (i) Nigeria, Blue Books 1917-1922, Sections 20.
- (ii) Nigeria, Fifth Legislative Council Address by the Governor, 1925, p. 15.
- (iii) Nigeria, Annual Report on the Customs Dept. 1929, p. 21.
- (iv) Nigeria, Blue Books 1930-1938, Sections 20 and 23.

Column (4): Column (2) plus Column (3).

Column (5): Percentage calculated.

Table 1.6

Contribution of Palm Products to Total Nigerian Export Duty1939-1954

Year	Total Export Duty £ (1)	Export Duty on Palm Oil £ (2)	Export Duty on Palm Kernel £ (3)	Total Export Duty on Palm Products £ (4)	Col 4 as % Col 1 (5)
1939	386,606	70,870	157,470	228,340	59.1
1940	434,442	76,085	123,754	199,839	46.0
1941	570,956	73,472	198,515	271,987	47.6
1942	615,438	81,990	180,913	267,903	43.5
1943	643,535	77,779	173,928	251,707	39.1
1944	641,218	71,782	164,603	236,385	36.9
1945	671,023	65,664	153,609	219,273	32.7
1946	563,194	58,014	145,552	203,566	36.1
1947	456,755	72,308	166,642	238,950	52.3
1948	1,499,892	329,605	520,938	850,543	56.7
1949	3,193,622	694,473	1,015,974	1,710,447	53.6
1950	3,444,341	752,330	1,195,329	1,947,659	56.5
1951	5,575,454	1,193,554	1,831,034	3,024,588	54.2
1952	8,751,172	1,816,436	2,238,533	4,054,969	46.3
1953	8,017,410	1,306,870	2,332,904	3,639,774	45.4
1954	21,292,831	1,344,798	2,382,048	3,726,846	17.5

Sources:

Columns (1)-(3): Nigerian Trade Reports 1939-1954.
See Table 1.2 for page references.

Column (4): Calculated.

Column (5): Calculated.

Table 1.7Contribution of Palm Products to Total Export Duty1955-1965

Year	Total Export Duty £'000 (1)	Export Duty on Palm Products £'000 (2)	Col 2 as % Col 1 (3)
1955	13,916	3,260	23.4
1956	13,475	3,713	27.6
1957	12,211	3,339	27.3
1958	14,650	3,410	23.3
1959	18,439	4,350	23.6
1960	15,490	3,824	24.7
1961	13,440	3,191	23.7
1962	12,092	2,567	21.2
1963	13,543	2,770	20.5
1964	14,694	2,900	19.7
1965	14,433	3,073	21.3

Source: Columns (1) and (2):

(i) Nigeria, Digest of Statistics,
Vol. 14, 1965, p. 89.

(ii) Nigeria, Economic Indicator, Vol. 2,
No. 3, March, 1966, p. 35.

Column (3): Percentage calculated.

Table 1.8

Palm Products Sales Tax as a Percentage of
E. Nigerian Internal Revenue¹

1955/56-1962/63

Year	Regional Revenue £'000 (1)	Revenue from Palm Products Sales Tax £'000 (2)	Col 2 as % Col 1 (3)
1955/56	2,338	1,050	44.9
1956/57	4,969	1,070	21.5
1957/58	5,652	1,018	18.0
1958/59	5,887	1,090	18.5
1959/60	5,502	1,103	20.0
1960/61	6,204	1,096	17.7
1961/62	7,587	1,060	14.0
1962/63	7,709	821	10.6

Sources: Column (1):
(i) Nigeria, Annual Abstract of Statistics
1964, p. 117.

Column (2):
(ii) Annual Reports of the E. Regional
Marketing Board, 1955/56-1958/59.
(iii) Annual Reports of the Eastern Nigeria
Marketing Board, 1960/61-1962/63.

Column (3): Percentage calculated.

Note: 1: Internal Revenue excludes revenue from Federal
sources and External borrowing.

Table 2.1.

World Vegetable Oil and Oilseeds Production Index
and their Proportion in Relation to Total World Production

1909-1937

1924/28 = 100

Year	COTTON		GROUNDNUTS		LINSEED		SOYA BEANS		SUNFLOWER		COLZAR RAPE		SESAME		COCONUTS		OLIVES		PALM OIL	
	Index	% of Ttl.	Index	% of Ttl.	Index	% of Ttl.	Index	% of Ttl.	Index	% of Ttl.	Index	% of Ttl.	Index	% of Ttl.	Index	% of Ttl.	Index	% of Ttl.	Index	% of Ttl.
1909/13 (av.)	81.8	22.1	58.1	12.8	74.3	16.0	37.7	5.1	33.8	2.9	127.8	9.9	102.2	5.6	48.2	6.6	78.5	10.1	58.8	4.6
1924/28 (av.)	100.0	18.4	100.0	15.1	100.0	14.7	100.0	9.3	100.0	5.9	100.0	5.3	100.0	3.8	100.0	9.4	100.0	8.8	100.0	5.3
1929/31 (av.)	101.3	17.2	117.6	16.3	99.7	13.5	117.5	10.0	110.3	6.0	104.5	5.1	112.5	3.9	112.6	9.7	114.3	9.2	109.3	5.3
1932/34 (av.)	92.2	15.9	126.4	17.8	87.8	12.1	101.8	8.9	126.1	7.0	100.6	5.0	106.8	3.8	119.8	10.4	110.5	9.0	128.5	6.4
1935/37 (av.)	123.4	18.7	134.5	16.7	92.0	11.2	111.4	8.5	116.2	5.6	109.0	4.7	117.7	3.7	128.6	9.9	122.2	8.8	175.7	7.7
1937	147.9	20.8	149.0	17.2	87.5	9.8	115.6	8.2	117.6	5.3	109.2	4.4	123.5	3.6	131.9	9.4	141.0	9.5	183.5	7.4

Source: Calculated from International Institute of Agriculture, Oils and Fats: Production and International Trade, Part I, Rome 1939, Table 109, pp. 335 & 336.

Table 2.2.

United Kingdom Imports of Oilseeds and Nuts ('000 Metric Tons)

1909-1936

	Average 1909-13	Average 1924-28	1929	1930	1931	1932	1933	1934	1935	1936
Copra	24	57	67	68	82	97	104	97	119	126
Groundnuts	3	97	134	115	138	97	132	114	153	188
Palm Kernels	22	221	153	128	126	160	130	135	161	148
Rape Seed	40	33	31	10	22	25	21	21	30	23
Soya Beans	254	117	206	92	112	163	160	180	161	83
Castor Beans	39	35	35	37	31	25	33	36	37	30
Palm Oil	35	47	57	48	47	49	62	88	83	119
Olive Oil	10	8	9	9	9	11	12	10	11	12
Other Oilseeds and nuts	37	42	38	31	12	16	10	9	8	12
TOTAL	464	657	730	538	579	643	664	690	763	741

Source: International Institute of Agriculture, Oils and Fats, Production and International Trade, Part II, Rome 1939, Tables 74 and 75, pp. 242/3.

Table 2.3

U.K. Imports of Oilseeds and Nuts (Equivalent Oil Yields) 1909-1936
(in thousands of metric tons)

	Average 1909-13	Average 1924-28	1929	1930	1931	1932	1933	1934	1935	1936
Copra	15	36	42	43	52	61	65	61	75	79
Groundnuts	1	41	56	48	58	41	55	48	64	79
Palm Kernels	10	100	69	58	57	72	59	61	72	67
Rape Seed	14	12	11	4	8	9	7	7	11	8
Soya Beans	41	19	33	15	18	26	25	29	26	13
Castor Beans	16	14	14	15	12	10	13	14	15	12
Palm Oil	35	47	57	48	47	49	62	88	83	119
Olive Oil	10	8	9	9	9	11	12	10	11	12
Other oilseeds and nuts	12	6	10	8	1	3	1	3	4	3
TOTAL	154	283	301	248	262	282	298	321	361	392

Source: Calculated from International Institute of Agriculture: Oils and Fats, Production and International Trade, Part II, Rome 1939, p. 243.

Table 2.4

U.K. Import Index of Oilseeds and Nuts (Equivalent Oil Yields) 1909-1936

1924-1928 = 100

Imports	1909-13	1924-28	1929	1930	1931	1932	1933	1934	1935	1936
Copra	41.6	100	116.7	119.4	144.4	169.4	180.5	169.4	208.3	219.4
Groundnuts	.2	100	136.6	177.0	141.5	100.0	134.1	117.0	156.1	192.7
Palm Kernels	10.0	100	69.0	58.0	57.0	72.0	59.0	61.0	72.0	67.0
Rape Seed	116.6	100	91.7	33.3	66.7	75.0	58.3	58.3	91.7	66.7
Soya Beans	215.7	100	173.7	78.9	94.7	136.8	131.5	152.6	136.8	68.4
Castor Beans	114.3	100	100.0	107.1	85.7	71.4	92.8	100.0	107.1	85.7
Palm Oil	74.5	100	121.3	102.1	100.0	104.3	131.9	187.3	176.6	253.3
Olive Oil	125.0	100	112.5	112.5	112.5	137.5	150.0	125.0	137.5	150.0
Other Oilseeds and nuts	200.0	100	166.6	133.3	16.6	50.0	-	50.0	66.7	50.0

Source: Calculated from Table 2.3

Oils, Fats and Rosin Used in the Manufacture of Soap in the United Kingdom
1927-1938 (thousand tons)

Table 2.5

Ingredients	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
<u>Vegetable:</u>												
(i) Palm Oil	47	50	44	40	37	37	46	58	61	81	77	88
(ii) Palm Kernel	40	38	33	33	32	32	31	31	35	38	39	40
(iii) Coconut	7	8	13	14	14	15	15	17	19	24	28	30
(iv) Acid Oils	6	5	5	4	4	4	5	6	6	4	26	27
(v) Groundnut	1	1	1	2	2	1	1	2	5	5	4	5
(vi) Soya Bean	2	10	6	3	3	3	1	1	3	3	2	4
(vii) Miscellaneous	4	5	9	12	15	9	12	3	2	13	5	3
Total	107	117	111	108	107	101	111	118	131	168	181	197
(i), (ii), (iii) & (v) as % of Total	89	83	82	83	79	84	84	92	92	88	82	83
<u>Animal:</u>												
Tallow and Bone grease	70	67	64	64	66	69	63	55	38	43	52	51
Miscellaneous	1	1	1	1	1	1	1	4	2	4	7	6
Total	71	68	65	65	67	70	64	59	40	47	59	57
Marine	10	12	14	21	20	24	25	27	38	38	49	39
Total Oils and Fats	188	197	190	194	194	195	200	204	209	253	289	293
Rosin	-	-	-	-	-	-	20	19	19	20	20	18
Grand Total	188	197	190	194	194	195	220	223	228	273	309	311
(i), (ii), (iii) & (v) as % of G. Total	50	49	48	46	44	44	42	48	53	54	48	52

Sources: Compiled from:

Imperial Economic Committee, Vegetable Oil and Oilseeds, London H.M.S.O. 1936, p. 84; 1938, p. 105
Commonwealth Economic Committee, Vegetable Oils and Oilseeds, London H.M.S.O. 1948, p. 98.

Percentages are calculated.

Table 2.6

Vegetable Oilseeds and Fats Used In the Manufacture of Margarine in the United Kingdom
1927-1936 (thousand tons)

Oils and Fats	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936
Palm Oil	(a)	(a)	(a)	(a)	(a)	(a)	(a)	2	3	3
Palm Kernel Oil	26	15	12	18	11	18	15	17	17	9
Groundnut Oil	19	20	33	32	29	12	13	11	8	11
Coconut Oil	49	60	60	47	47	39	31	25	33	40
Soya Oil	12	12	4	6	8	14	15	6	13	5
Sunflower Oil	-	6	11	4	3	12	7	-	-	-
Other Vegetable Oils	2	2	2	4	2	3	2	-	-	-
Total	108	113	122	111	100	98	83	61	74	68
Animal Fats:										
Oleo Fats and Oils	15	12	4	10	9	8	9	7	8	9
Other Animal Fats	4	4	13	3	3	3	1	2	1	1
Total	19	16	17	13	12	11	10	9	9	10
Whale Oil	30	32	32	35	36	48	59	53	59	66
Grand Total	157	163	171	159	148	157	152	123	142	144

Source: International Institute of Agriculture: Oils and Fats, Production and International Trade, Part II, Rome 1939, p. 255.

Note: (a) less than 500 tons.

Table 2.7

Production of Soap in the United Kingdom for Selected Years1909-13; 1924-28; 1929-38

(Thousand Tons)

Year	Quantity	Year	Quantity
1909-13 (av.)	350	1933	469
1924-28 (av.)	424	1934	492
1929	431	1935	497
1930	421	1936	(a)
1931	(a)	1937	530
1932	(a)	1938	540

Sources:

- (i) Imperial Economic Committee: Vegetable Oils and Oilseeds, London H.M.S.O., 1938, p. 102.
- (ii) Commonwealth Economic Committee: Vegetable Oils and Oilseeds, London H.M.S.O., 1948, p. 97.
- (iii) International Institute of Agriculture, Oils and Fats, Production and International Trade, Part II, Rome 1939, p. 254, Table 83.

Note: (a) Figures not available.

Table 2.8

U.K. (c.i.f.) Prices and Price Index for Palm Products,
Copra and Groundnuts
1911-1938

1924/28 = 100

Year	PALM OIL		COPRA		PALM KERNEL		GROUNDNUTS	
	Prices £/ton	Index	Prices £/ton	Index	Prices £/ton	Index	Prices £/ton	Index
1911	29.9	81.2	24.6	86.6	18.5	89.4	18.8	83.6
1912	29.4	80.0	26.1	91.9	20.0	96.6	21.7	96.4
1913	30.7	83.4	29.9	105.3	23.6	114.0	23.1	102.7
1914	29.2	79.3	24.9	87.6	19.4	93.7	15.8	70.2
1915	33.0	89.7	25.9	91.2	16.8	81.2	16.5	73.3
1916	38.3	104.0	34.4	121.1	22.4	108.2	28.0	124.4
1917	47.4	128.8	45.3	159.5	25.7	124.1	30.8	136.8
1918	48.0	130.4	45.5	160.2	26.0	125.6	32.0	142.2
1919	75.0	203.8	52.5	184.8	37.4	180.6	41.0	182.2
1920	61.9	168.2	54.5	191.9	36.2	174.8	37.0	164.4
1921	35.0	95.1	29.4	103.5	19.7	95.2	20.4	90.7
1922	33.4	90.8	24.9	87.7	17.6	85.0	21.7	96.4
1923	36.6	99.5	28.3	99.7	19.5	94.2	23.1	102.7
1924/28	36.8	100.0	28.4	100.0	20.7	100.0	22.5	100.0
1929	33.1	89.9	22.5	79.2	17.8	86.0	18.8	83.6
1930	22.9	62.2	18.0	63.4	14.8	71.4	13.4	59.6
1931	16.9	45.9	13.7	48.2	10.4	50.2	14.9	66.2
1932	16.6	45.1	14.9	52.5	11.1	53.6	14.8	65.8
1933	14.5	39.4	11.3	39.8	8.8	42.5	10.6	47.1
1934	12.6	34.2	9.3	32.7	7.2	34.8	9.8	43.6
1935	19.1	51.9	12.7	44.7	9.8	47.3	14.3	63.5
1936	19.7	53.5	15.6	54.9	11.9	57.5	14.5	64.4
1937	22.1	60.0	17.4	61.3	13.4	64.7	14.2	63.1
1938	14.4	39.1	11.4	40.1	9.6	46.4	10.6	47.1

- Sources:
- (i) Empire Marketing Board, Survey of Oilseeds and Vegetable Oils, Vol. II, London H.M.S.O., 1932, p. 169; Vol. I, 1932, pp. 89, 116.
 - (ii) Imperial Economic Committee: Vegetable Oils and Oilseeds, London H.M.S.O., 1938, pp. 54, 82, 65, 75.
 - (iii) Index calculated. Base year 1924/28.

Table 2.2

Export of Palm Kernels from the Principal Exporting Countries 1924-1938

(thousand tons)

Countries	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Nigeria	253	273	249	257	247	251	260	254	309	260	289	313	386	338	312
Sierra Leone	61	63	65	65	67	60	57	54	77	64	69	78	85	77	64
Gold Coast	7	7	8	7	6	7	5	4	7	3	3	6	11	9	5
Br. Malaya	(a)	(a)	(a)	(a)	(a)	(a)	(a)	1	1	2	3	4	5	7	9
N.E. Indies	1	1	2	4	6	8	9	12	18	23	25	30	36	41	47
Belgian Congo	47	73	69	73	71	74	65	46	57	61	41	64	91	94	87
Fr. W. Africa	71	72	71	73	59	61	77	65	70	53	75	79	97	80	70
Total	440	489	464	479	456	461	473	436	539	466	505	544	711	646	594

Nigerian exports
as % of total

57.5 55.8 53.7 53.7 54.2 54.4 55.0 58.3 57.3 55.8 57.2 54.5 54.3 52.3 52.5

Sources: (i) E.M.B. (54) Survey of Vegetable Oilseeds and Oils, Vol. 1, June 1932, pp. 12, 21, 24, 30 and 34;

Imp. Econ. Committee, Vegetable Oils and Oilseeds 1937, p. 70;

Commonwealth Economic Committee, Vegetable Oils and Oilseeds, p. 72.

(ii) Percentage calculated.

Note: (a) Under 500 tons.

Table 2.10

The United Kingdom (c.i.f.) Prices, the f.o.b. Prices and the Index of
Prices for Nigerian Palm Products, 1911-1938

1923 = 100

YEAR	P A L M O I L				P A L M K E R N E L			
	c.i.f. Prices £/ton	Index of c.i.f. Prices	f.o.b. Prices £/ton	Index of f.o.b. Prices	c.i.f. Prices £/ton	Index of c.i.f. Prices	f.o.b. Prices £/ton	Index of f.o.b. Prices
1911	29.9	81.7	25.0	111.6	18.5	94.9	16.4	131.2
1912	29.4	81.6	22.3	99.6	20.0	102.6	15.1	120.8
1913	30.7	83.9	23.1	103.1	23.6	121.0	19.1	152.8
1914	29.2	79.8	20.6	91.9	19.4	99.5	13.7	109.6
1915	33.0	90.1	22.3	99.6	16.8	86.2	20.0	160.0
1916	38.3	104.6	18.1	80.8	22.4	114.9	19.5	156.0
1917	47.4	129.5	17.1	76.3	25.7	131.8	13.4	107.2
1918	48.0	131.1	21.4	95.5	26.0	133.3	14.3	114.4
1919	75.0	204.9	33.0	147.3	37.4	191.8	18.0	144.0
1920	61.9	169.1	42.4	189.3	36.2	185.6	26.0	208.0
1921	35.0	95.6	15.7	70.0	19.7	101.0	11.3	90.4

continued...

Continued:

YEAR	P A L M O I L				P A L M K E R N E L			
	c.i.f. Prices £/ton	Index of c.i.f. Prices	f.o.b. Prices £/ton	Index of f.o.b. Prices	c.i.f. Prices £/ton	Index of c.i.f. Prices	f.o.b. Prices £/ton	Index of f.o.b. Prices
1922	33.4	91.3	17.8	79.5	17.6	90.2	11.1	88.8
1923	36.6	100.0	22.4	100.0	19.5	100.0	12.5	100.0
1924	39.9	109.0	25.8	115.2	21.4	109.7	14.8	118.4
1925	40.1	109.5	26.0	116.1	21.2	108.7	15.1	120.8
1926	36.9	100.8	24.3	108.5	20.2	103.6	14.0	112.0
1927	32.2	88.0	22.5	100.4	20.0	102.6	14.3	114.4
1928	35.1	95.9	24.2	108.0	20.5	105.1	15.4	123.2
1929	33.1	90.4	23.7	105.8	17.8	91.3	13.0	104.0
1930	22.9	62.6	16.0	71.4	14.8	75.9	9.2	73.6
1931	16.9	46.1	9.7	43.3	10.4	53.3	6.3	50.4
1932	16.6	45.4	9.3	41.5	11.1	56.9	6.6	52.8
1933	14.5	39.6	6.0	26.8	8.8	45.1	4.9	39.2
1934	12.6	34.4	4.0	17.8	7.2	36.9	3.6	28.8
1935	19.1	52.2	9.4	41.9	9.8	50.3	6.4	51.2
1936	19.7	53.8	10.9	48.7	11.9	61.0	8.7	69.6

continued.....

Continued:

YEAR	P A L M O I L			P A L M K E R N E L				
	c.i.f. Prices £/ton	Index of c.i.f. Prices	f.o.b. Prices £/ton	Index of f.o.b. Prices	c.i.f. Prices £/ton	Index of c.i.f. Prices	f.o.b. Prices £/ton	Index of f.o.b. Prices
1937	22.1	60.4	11.9	53.1	13.4	68.7	9.2	73.6
1938	14.4	39.3	5.1	22.7	9.6	49.2	5.5	44.0

Sources: U.K. (c.i.f.) prices: See Table 2.3.

- F.o.b. Prices:
- (i) Blue Book for S. Nigeria 1913.
 - (ii) Blue Book, Nigeria, 1918, 1919, 1920, 1930, 1937, 1938, Sections Y.7 & 23.
 - (iii) Nigeria, Annual Report on the Customs Dept. of Nigeria 1923, p. 7.
 - (iv) Colonial Reports 1931 (No. 1569); 1932 (No. 1625); 1933 (No. 1668); 1934 (No. 1710); 1935 (No. 1763); 1936 (No. 1842).
 - (v) Index calculated.

Note: Both c.i.f. and f.o.b. prices are average annual prices.

Table 2.11

U.K. Imports of Nigerian Palm Oil and Palm Kernels 1925-1937
(thousand tons)

YEAR	PALM OIL			PALM KERNEL		
	Total U.K. Import (1)	Import from Nigeria (2)	% Nigerian Import (3)	Total U.K. Import (1)	Import from Nigeria (2)	% Nigerian Import (3)
1925	80	70	87.5	234.5	158.1	67.4
1926	69	62	89.9	215.5	138.6	64.3
1927	58	48	82.8	183.5	124.1	67.6
1928	52	46	88.5	164.1	110.3	67.2
1929	60	41	68.3	151.2	113.5	75.0
1930	50	36	72.0	125.7	98.9	78.7
1931	49	30	61.2	123.6	96.0	77.6
1932	51	46	90.1	158.0	134.0	84.8
1933	64	64	100.0	128.0	102.0	79.7
1934	90	72	80.0	133.0	109.0	81.9
1935	86	82	95.3	159.0	140.0	88.0
1936	120	101	84.2	145.0	139.0	95.8
1937	104	86	82.7	150.0	132.0	88.0

Sources: Columns (1) E.M.B. (54). Survey of Vegetable Oilseeds and Oils, Vol. 1, Oil Palm Products 1932, p. 45.

Imperial Economic Committee, Vegetable Oils and Oilseeds, 1938, p. 80.

Columns (2) Nigeria, Blue Book: 1927, 1932, 1934, 1938; pp. 495/499, T. 152/56; T. 162/166; T. 186/90 respectively.

Columns (3) Percentage calculated.

Table 2.12

Quantity of Palm Products exported from Nigeria1906-1938(tons)

Year	PALM OIL		PALM KERNEL	
	Tonnage	Index 1923=100	Tonnage	Index 1923=100
1906	57,260	57.6	113,347	50.8
1907	65,473	65.8	133,630	59.9
1908	65,460	65.8	136,558	61.2
1909	82,130	82.6	158,849	71.2
1910	76,851	77.3	172,997	77.5
1911	79,337	79.8	176,390	79.0
1912	76,994	77.4	184,625	82.7
1913	83,090	83.6	174,718	78.3
1914	72,531	72.9	162,452	72.8
1915	72,991	73.4	153,319	68.7
1916	67,422	67.8	161,439	72.3
1917	74,619	75.0	185,998	83.3
1918	86,425	86.9	205,167	91.9
1919	100,967	101.5	216,913	97.2
1920	84,856	85.3	207,010	92.8
1921	52,771	53.0	153,354	68.7
1922	87,609	88.1	178,723	80.0
1923	99,439	100.0	223,172	100.0
1924	127,083	127.8	252,847	113.3
1925	128,113	128.8	272,925	122.3
1926	113,267	113.9	249,100	111.6
1927	113,240	113.8	257,206	115.3
1928	127,110	127.8	246,537	110.5
1929	131,786	132.5	251,368	112.6
1930	135,801	136.6	260,022	116.5
1931	118,133	118.8	254,454	114.0
1932	116,061	116.7	309,060	138.5
1933	128,696	129.4	259,945	116.5
1934	112,773	113.4	289,447	129.7
1935	142,628	143.4	312,746	140.1

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	PALM OIL		PALM KERNEL	
	Tonnage	Index 1923=100	Tonnage	Index 1923=100
1936	162,779	163.7	386,143	173.0
1937	145,718	146.5	337,749	151.3
1938	110,243	110.9	312,048	139.8

- Sources: Tonnage. (i) Nigeria, Legislative Council Address by the Governor, 1924, p. 27; *ibid.*, 1930, p. 16.
- (ii) Colonial Reports Nos. 1625, 1842, 1904 of 1932, 1936, 1938, pp. 42, 53, 57 respectively.
- (iii) Index calculated.

Table 2.13

Distribution of British West African Palm Products to
Major Importing Countries, 1913

Countries	PALM KERNEL		PALM OIL	
	Quantity (tons)	% of Total Exports	Quantity (tons)	% of Total Exports
U.K.	35,175	15.0	74,237	83.4
Germany	181,305	77.4	10,427	11.7
France	1,935	1.0	3,203	3.6
Holland	5,984	2.6	-	-
S. Africa	5,305	2.2	981	1.1
Others	4,504	1.8	150	0.2
Total	234,208	100.0	88,997	100.0

Sources and Notes: (i) Cd. 8247, 1916, p. 5.

(ii) Percentage calculated.

Notes: Nigerian exports of palm kernel and palm oil in 1913 were 174,718 tons and 83,090 tons respectively, i.e. 74.6% and 93.4% of total B.W. African exports for palm kernel and palm oil. See Table 2.10.

Table 2.14

Distribution of Nigerian Palm Oil Export to Major Importing Countries

1919-1938

Year	U.K.		U.S.A.		ITALY		GERMANY		HOLLAND		FRANCE		BELGIUM	
	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%
1919	85,576	86.2	12,819	12.9	-	-	-	-	-	-	842	0.9	-	-
1920	79,283	93.5	3,853	4.5	-	-	-	-	-	-	1,699	2.0	-	-
1921	47,592	92.1	1,341	2.6	-	-	619	1.2	37	.1	2,046	3.4	34	0.1
1922	62,744	71.6	16,935	19.3	5,717	6.5	1,325	1.5	569	0.1	102	(a)	167	(a)
1923	61,911	62.3	22,385	22.5	4,706	4.7	6,939	7.0	3,320	3.3	-	-	160	0.2
1924	69,817	55.2	14,447	11.4	9,115	7.2	25,410	20.0	7,107	5.6	456	0.4	212	0.2
1925	69,985	54.8	33,191	26.0	10,773	8.4	6,212	4.9	6,246	4.9	1,066	0.8	240	0.2
1926	62,110	55.1	27,336	24.2	12,238	10.8	7,496	6.6	1,747	1.5	984	1.0	843	0.8
1927	47,503	42.0	40,787	36.0	10,341	9.1	10,046	8.9	2,112	1.9	1,581	1.4	844	0.7
1928	46,427	36.7	43,641	34.5	17,429	13.8	12,895	10.2	3,690	2.9	1,515	1.2	923	0.7
1929	40,699	31.0	59,711	45.4	13,701	10.4	9,917	7.5	6,583	5.0	642	0.5	134	0.2
1930	35,653	26.3	61,145	45.2	16,664	12.3	12,325	9.1	8,662	6.4	315	0.2	625	0.5
1931	30,230	25.7	43,898	37.3	20,727	17.6	14,075	12.0	7,388	6.3	1,297	1.1	11	(a)
1932	46,365	40.0	25,058	21.6	24,879	21.5	8,426	7.3	7,187	6.2	3,827	3.3	31	0.1
1933	63,820	51.6	23,592	19.1	21,080	17.0	9,686	7.8	5,130	4.1	452	0.4	36	(a)

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Continued...

Year	U.K.		U.S.A.		ITALY		GERMANY		HOLLAND		FRANCE		BELGIUM	
	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%
1934	72,169	63.7	6,334	5.6	21,080	18.6	9,686	8.5	2,502	2.2	1,500	1.3	101	0.1
1935	82,379	62.7	22,440	17.1	20,513	15.6	4,125	3.1	1,605	1.2	237	0.2	178	0.1
1936	100,874	71.0	12,532	8.8	17,904	12.6	4,212	3.0	6,200	4.4	-	-	256	0.2
1937	86,340	58.5	24,634	16.7	13,605	9.2	20,437	13.9	2,506	1.7	19	(a)	53	(a)
1938	84,503	79.3	6,634	6.2	4,089	3.8	10,411	9.8	979	.9	-	-	-	-

Sources: (i) Quantity: Nigeria, Blue Book, 1923, pp. 407-411; 1927, pp. 495-499; 1932, Sect. T. 152-156; 1934, Sect. T. 162-166; 1938, Sect. T. 186-190.

(ii) Percentage calculated.

Note: (a) Less than 0.1%.

Table 2.15

Distribution of Nigerian Palm Kernel Export to Major Importing Countries

1919-1932

Year	U.K.		GERMANY		HOLLAND		U.S.A.		FRANCE		ITALY	
	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%
1919	209,177	97.5	-	-	-	-	1,245	0.5	4,203	2.0	-	-
1920	193,827	96.4	-	-	2,273	1.1	3,388	1.7	1,608	0.8	-	-
1921	151,706	99.8	142	0.1	-	-	-	-	33	(a)	-	-
1922	169,058	95.0	8,389	4.7	380	0.2	-	-	-	-	13	0.1
1923	162,049	72.6	47,729	21.4	11,434	5.1	-	-	1,569	0.7	63	(a)
1924	170,240	67.3	69,688	27.6	10,187	4.0	338	0.1	885	0.4	1,508	0.6
1925	158,112	58.0	103,184	37.8	6,444	2.3	398	0.2	4,175	1.5	510	0.2
1926	138,590	55.7	100,540	40.4	5,515	2.2	520	0.2	3,835	1.5	28	(a)
1927	124,072	48.8	119,162	46.8	4,627	1.8	591	0.2	4,857	1.9	1,154	0.5
1928	110,305	45.7	116,552	48.3	4,674	1.9	991	0.4	6,029	2.5	1,662	0.7
1929	113,481	46.1	108,149	44.0	21,185	8.6	506	0.2	1,303	0.5	1,411	0.6
1930	98,854	38.5	136,221	53.1	15,723	6.1	3,950	1.5	718	0.3	1,239	0.5
1931	96,044	38.0	126,015	49.5	12,573	5.0	15,082	6.0	939	0.3	1,270	0.5
1932	133,687	45.4	115,242	39.1	34,592	11.7	8,183	2.8	2,346	0.7	631	0.3

continued...

Continued:

Year	U.K.		GERMANY		HOLLAND		U.S.A.		FRANCE		ITALY	
	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%	Quantity (tons)	%
1933	102,316	41.8	104,585	42.7	30,017	12.3	6,338	2.6	451	0.2	1,027	0.4
1934	109,596	41.7	104,585	39.8	45,314	17.2	2,542	0.9	-	-	1,027	0.4
1935	139,772	52.2	77,900	29.1	43,798	16.3	6,499	2.4	-	-	-	-
1936	139,260	46.3	106,265	35.4	48,772	16.2	5,115	1.7	-	-	1,101	0.4
1937	132,997	37.0	170,970	47.6	44,554	12.4	9,669	2.7	405	0.1	600	0.1
1938	115,594	38.7	102,917	34.5	74,925	25.0	2,858	1.0	300	0.1	2,075	0.7

Sources: Quantity: Nigeria, Blue Books, 1923, pp. 407/411; 1927, pp. 495/499; 1932, Sect. T. 152/156;
(i) 1934, Sect. T. 162/166; 1938, Sect. T. 186/190.

(ii) Percentage calculation based on total yearly exports from Nig. Table 2.10.

Note: (a) less than 0.1%

Table 2.16

Exports of Palm Kernel Oil Produced in the United Kingdom
1924-1931 (tons)

Countries	1924	1925	1926	1927	1928	1929	1930	1931
U.S.A.	2,954	26,760	23,231	13,390	13,968	15,366	4,855	4,382
Poland (inc. Danzig)	1,186	663	582	368	107	105	309	165
Portugal	310	476	585	316	297	40	1	-
Germany	8,753	486	103	216	10	15	580	67
France	1,309	819	175	45	142	15	44	9
Netherlands	9,922	1,963	710	1,600	2,190	1	150	51
Belgium	2,730	300	10	2	-	-	-	-
Other countries	1,098	795	669	404	674	542	733	789
Total	28,262	32,262	26,095	16,386	17,386	16,084	6,672	5,463
Refined Oil								
Irish F. State	1,154	1,502	730	243	807	480	1,293	1,212
Other countries	1,838	1,808	905	735	578	143	454	159
Total	2,992	3,310	1,635	978	1,385	623	1,747	1,371
Grand Total	31,254	35,572	27,730	17,364	18,771	16,707	8,419	6,834

Source: Empire Marketing Board (54). Survey of Vegetable Oilseeds and Oils, Vol. 1, p. 40.

Export Value of Nigerian Palm Products 1906-1938

Year	Palm Oil (£)	Palm Kernel (£)	Total
1906	1,001,648	1,193,939	2,195,587
1907	1,313,960	1,658,292	2,972,252
1908	1,154,933	1,424,595	2,579,528
1909	1,447,163	1,815,967	3,263,130
1910	1,742,234	2,450,814	4,193,048
1911	1,696,876	2,574,405	4,271,281
1912	1,654,933	2,797,411	4,452,344
1913	1,854,384	3,109,818	4,964,202
1914	1,571,691	2,541,150	4,112,841
1915	1,462,162	1,692,711	3,154,873
1916	1,402,799	1,739,706	3,142,505
1917	1,882,997	2,581,702	4,464,699
1918	2,704,446	3,226,306	5,930,752
1919	4,245,893	4,947,995	9,193,888
1920	4,677,445	5,717,981	10,395,426
1921	1,655,914	2,831,688	4,487,602
1922	2,676,241	2,809,655	5,485,896
1923	2,982,488	3,740,852	6,723,340
1924	3,944,340	4,461,482	8,405,822
1925	4,166,096	4,937,450	9,103,546
1926	3,616,159	4,440,452	8,056,611
1927	3,617,332	4,574,191	8,191,523
1928	3,751,484	4,423,114	8,174,598
1929	3,767,301	4,264,850	8,032,151
1930	3,250,413	3,679,166	6,929,579
1931	1,540,797	2,132,162	3,672,959
1932	1,462,478	2,696,068	4,158,546
1933	1,384,431	1,898,522	3,282,953
1934	885,400	1,590,646	2,476,046
1935	1,656,159	2,245,004	3,901,163
1936	2,078,838	3,637,396	5,716,234
1937	2,368,924	3,647,717	6,016,641
1938	981,330	2,168,366	3,149,696

- Sources: (i) Colonial Reports (S. Nigeria) 1907-1913, Nos. 583, 665, 695, 735, 782, 825, pp. 13, 7, 7, 7, 8, 10 respectively.
(ii) Colonial Reports (Nigeria) 1914-1919, Nos. 878, 920, 1008, 1030, 1064, pp. 7, 9, 4, 4, 5 respectively.
(iii) Colonial Report (Nigeria) 1927, No. 1384, p. 19.
(iv) Nigeria Blue Books 1920, 1930, 1932, 1937 & 1938, pp. 3, 374, T. 15, T. 16, T. 16, respectively.
(v) Total added.

Table 3.4

Export of Palm Oil from Principal Exporting Countries, 1924-1938
(thousand tons)

Countries	1924	1925	1926	1927	1928	1929	1930	1931	1932	1933	1934	1935	1936	1937	1938
Nigeria	127	128	113	113	127	132	136	118	116	129	113	143	163	146	110
Sierra Leone	3	3	3	4	3	3	4	1	2	2	2	3	1	2	1
Gold Coast	1	1	2	1	0.5	0.6	0.5	(a)	1	(a)	(a)	(a)	(a)	0.5	0.6
Br. Malaya	-	0.5	0.7	0.9	1	2	3	5	8	12	16	25	29	43	55
N.E. Indies	5	7	13	21	28	35	48	60	83	121	119	141	170	194	217
Belgian Congo	13	18	18	18	26	30	36	36	38	51	44	56	59	68	69
Fr. W. Africa	25	26	25	25	17	23	28	21	14	12	15	26	29	20	14
TOTAL	174	183.5	174.7	182.9	202.5	226.6	255.5	241	262	327	309	394	451	478.5	466.6
Nig. Exports as % of Total	73.0	69.8	64.7	61.8	62.7	58.5	53.2	49.0	44.3	39.4	36.6	36.3	36.1	30.8	23.6

Source: Empire Marketing Board (54) Survey of Vegetable Oilseeds and Oils, Vol. 1, 1932, pp. 70, 77, 78, 82 & 87.
Imperial Economic Committee, Vegetable Oils and Oilseeds, 1937, p. 71.
Commonwealth Economic Committee, Vegetable Oils and Oilseeds, 1948, p. 78.

Percentage calculated.

(a) Under 500 tons.

Table 6.1

Tonnage of Palm Oil and Palm Kernels
Purchased for Export, 1939-1954

Year	Palm Oil (tons)	Palm Kernels (tons)
1939	147,003	329,283
1940	154,195	296,632
1941	143,063	317,126
1942	152,571	315,330
1943	139,562	324,198
1944	141,407	330,811
1945	116,324	299,039
1946	131,655	285,985
1947	154,396	312,903
1948	147,144	355,491
1949	161,545	372,905
1950	167,124	380,929
1951	145,476	329,995
1952	190,316	412,777
1953	224,214	433,584
1954	216,587	464,940

Sources: (i) Colonial Office: Report of the Mission appointed to enquire into the production and transport of Vegetable Oils and Oil Seeds produced in West African Colonies (London, H.M.S.O., 1947), p. 90, Appendix XI; p. 69, Appendix X.

(ii) Nigeria Oil Palm Produce Marketing Board Annual Reports, 1948/49, pp. 22, 24; 1949/50, pp. 10, 11; 1950/51, pp. 11, 12; 1952/53, pp. 13, 14; 1953/54, pp. 12, 13.

Note: Figures for 1939/1947 have been converted from financial year (i.e. 1st April to 31st March) to calendar year.

Table 6.4

Palm Oil and Palm Kernels Producer Prices
1939-1954

YEAR	PALM OIL							PALM KERNELS
	Grade							
	Special	I	II	III	IV	V	Average	
1939	-	-	5.9	-	-	-	-	5.1
1940	-	-	6.2	-	-	-	-	4.6
1941	-	-	6.2	-	-	-	-	4.65
1942	-	-	9.25	-	-	-	-	5.7
1943	-	-	10.1	-	-	-	-	7.8
1944	-	-	12.3	-	-	-	-	8.7
1945	-	-	13.1	-	-	-	-	9.2
1946	-	17.0	15.3	-	-	-	16.15	10.7
1947	-	25.5	-	-	-	-	-	16.75
1948	-	32.25	30.0	28.5	27.4	26.25	28.9	21.0
1949	-	42.75	37.1	33.0	29.6	26.25	33.75	26.0
1950	53.0	42.75	37.1	33.0	29.6	26.25	36.9	26.0
1951	71.0	55.0	43.0	34.0	30.0	-	46.6	32.0
1952	80.0	61.0	47.0	35.0	30.0	-	50.6	36.0
1953	75.5	58.0	45.0	34.5	-	-	53.25	34.0
1954	65.0	50.0	38.0	33.0	-	-	46.5	34.0

Sources: (i) See Table 6.1, source (i).

(ii) Annual Report of the Department of Commerce and Industries 1947/48, p. 9.

(iii) Annual Reports of the Nigeria Oil Palm Produce Marketing Board, 1949, p. 6; 1954, pp. 3 & 5.

Table 6.2

Producer Prices and Index of Producer Prices for Palm Products 1949-1954

1949 = 100

YEAR	P A L M O I L										P A L M K E R N E L S			
	Special Grade £/ton	Index 1950 = 100	Grade I £/ton	Index 1949 = 100	Grade II £/ton	Index 1949 = 100	Grade III £/ton	Index 1949 = 100	Grade IV £/ton	Index 1949 = 100	Grade V £/ton	Index 1949 = 100	Palm Kernel Prices £/ton	Index 1949 = 100
1949	-	-	42.75	100	37.1	100	33.0	100	29.6	100	26.25	100	26.0	100
1950	53.0	100	42.75	100	37.1	100	33.0	100	29.6	100	26.25	100	26.0	100
1951	71.0	134	55.0	129	43.0	116	34.0	103	30.0	101	-	-	32.0	123
1952	80.0	151	61.0	143	47.0	127	35.0	106	30.0	101	-	-	36.0	138
1953	75.5	142	58.0	136	45.0	121	34.5	104	-	-	-	-	34.0	131
1954	65.0	123	50.0	117	38.0	102	33.0	100	-	-	-	-	34.0	131

Sources: Producer Price: Annual Reports of the Nigeria Oil Palm Produce Marketing Board, 1949, p. 6, 1954, pp. 3 & 5.

Producer Price Index calculated. For Special Grade Oil base year is 1950, i.e. first year when special grade oil produced by local farmers was exported.

Table 6.8
Percentage Changes in the Grades
of Oil Produced for Export, 1949-1954

Year	Special Grade	Grade I	Grade II	Grade III	Grade IV	Grade V
1949	-	66.4	14.5	12.7	6.0	0.4
1950	0.2	61.3	17.8	14.4	5.8	0.5
1951	6.3	70.8	11.4	7.5	4.0	-
1952	29.6	56.3	7.4	5.2	1.5	-
1953	50.4	38.0	7.2	4.4	-	-
1954	60.9	29.9	4.4	4.8	-	-

Source: Sixth Annual Report of the Nigeria Oil Palm Produce Marketing Board 1954, pp. 13, 14.

Table 6.9
Nigeria Oil Palm Produce Marketing Board's Surpluses,
Development¹ and Research Allocation 1949-1954

Year	Total Surplus £ (1)	Development Allocation £ (2)	Research Allocation £ (3)
1949	5,670,584	2,587,500	530,608
1950	4,859,895	1,623,739	-
1951	7,637,565	1,779,404	1,466,273
1952	6,946,289	1,562,915	520,972
1953	-1,720,754	804,127	476,959
1954	-752,597	800,000	87,889
Total	22,640,982	9,157,685	3,082,701
% of total	100	40.4	13.6

Sources: Column (1) Nigeria Oil Palm Produce Marketing Board Annual Reports: 1949, p. 57; 1950, p. 43; 1951, p. 45; 1952, p. 38; 1953, p. 36; 1954, p. 43.

Columns (2) and (3) Nigeria Oil Palm Produce Marketing Board Annual Reports: 1949, p. 56; 1950, p. 42; 1951, p. 44; 1952, p. 36; 1953, p. 36; 1954, p. 40.

Note 1: (i) Allocation for Development refers to investment allocation in oil mills and plantation cultivation.
(ii) - denotes losses.

Table 6.10

Expenditure by Eastern Nigerian Production Board on Direct Agricultural Projects

1950-1954

(£000's)

Year	Oil Mills (1)	Oil Palm Plantation (2)	Coffee Plantation (3)	Cashew Plantation (4)	Coconut Plantation (5)	Cattle Ranch (6)	Total (7)
1950	261.0	15.5	-	-	-	4.7	281.2
1951	181.0	17.3	4.0	2.9	1.3	2.9	209.4
1952	77.2	28.2	41.6	32.4	2.8	5.6	187.8
1953	215.0	27.2	58.3	38.7	30.3	5.7	375.2
1954	191.0	96.1	39.2	31.1	27.4	3.0	387.8
Total	925.2	184.3	143.1	105.1	61.8	21.9	1,441.4
% of Total	64.2	12.8	9.9	7.3	4.3	1.5	100

Sources: Column (1) Nigerian Journal of Economic & Social Studies, Vol. 6, No. 1, March 1964, pp. 102, 112.

Column (2) Eastern Nigeria Development Corporation: Development, Vol. 10, No. 27, July/September 1966, pp. 57, 58.

Columns (3), (4), (5), (6) Nigerian Journal of Economic & Social Studies, Vol. 6, No. 1, March 1964, pp. 102, 112.

Table 6.11

Number of Production Boards' Mills in Operation
1949/54

Year	Mills located in E. Nigeria (1)	Mills located in W. Nigeria (2)	Total (3)
1949	1	1	2
1950	9	1	10
1951	32	4	36
1952	46	4	50
1953	50	14	64
1954	56	15	71

Sources: Column (1) Annual Reports of the Eastern Regional Production Development Board: 1949/50, p. 4; 1951/52 Part I, pp. 12, 13, 15; 1952/53, p. 4; 1953/54, p. 13.

Column (2) Annual Reports of the Western Regional Production Development Board: 1952/53, p. 23; 1953/54, p. 18.

Table 6.13

Tonnage of Oil Mills Processed Palm Oil Purchased
by the Marketing Board, 1949-1954

Year	Total Tonnage Purchased (1)	Oil Mills Processed Oil (tons) (2)	Col 2 as % Col 1 (3)
1949	161,545	7,254	4.5
1950	167,124	8,450	5.0
1951	145,476	10,237	7.0
1952	190,316	11,781	6.2
1953	224,214	12,539	5.6
1954	216,587	11,594	5.4

Sources: Column (1) See Table 6.1.

Column (2) Annual Reports of the Nigeria Oil Palm Produce Marketing Board: 1949, p. 25; 1950, p. 12; 1952, p. 14; 1954, p. 12.

Column (3) Percentage calculated.

Table 6.16

Palm Trees Acreage Planted by the Production Boards
1949-1954

Year	E. Nigeria (acreage) (1)	W. Nigeria (acreage) (2)	Total (3)
1947/48 ¹	673	-	673
1949	181	-	181
1950	140	-	140
1951	-	-	-
1952	502	145	647
1953	403	235	638
1954	504	450	954
Total	2,403	830	3,233

Sources: Column (1): Eastern Nigeria Development Corporation: Development, Vol. 10, No. 27, July/Sept. 1966, p. 57.

Column (2): Western Regional Production Development Board, Annual Reports: 1952/53, p. 8; 1953/54, p. 12.

Note: ¹ The acreage of 1947/48 is that transferred from the Agricultural Department Plantations to the E. Nigerian Production Board.

Table 6.17Area and Percentage of Land Devoted to Various Usages1950/51

Land Classification	Area (sq. miles)	Percentage
Under farm crops	30,723	9.4
Under tree crops	3,935	1.2
Fallow	45,296	13.8
Forest Reserve	24,942	7.6
Non-agricultural	3,171	1.0
Grazing	-	-
Uncultivated bush and waste	220,402	67.0

Source: Nigeria: Department of Statistics: Report on the
Sample Census of Agriculture 1950/51, Lagos 1952,
Table 12, p. 48.

Table 7.1

Regional Distribution of
Palm Oil Export Production (percentage)

1955-1963

Year	East	West	North
1955	86.7	11.6	1.7
1956	87.8	10.3	1.9
1957	89.8	9.1	1.1
1958	90.6	8.4	1.0
1959	89.4	9.9	0.7
1960	89.4	10.1	0.5
1961	92.7	7.1	0.2
1962	94.0	6.0	-
1963	93.5	6.5	-

Source: Calculated from Table 8.15,
Annual Abstract of Statistics,
Nigeria, 1964, p. 86.

Table 7.2.

Quantity and Value of Principal Crops Exported from Eastern Nigeria 1955-1964

Year	Quantity (tons)						Value £'000				% of Total
	Palm Oil	Palm Kernels	Cocoa	Total Value	Palm Oil	% of Total	Palm Kernels	% of Total	Cocoa	% of Total	
1955	159,071	173,190	1,633	19,710.2	11,505.6	58.4	7,691.5	39.0	513.6	2.6	
1956	165,511	176,422	1,686	21,553.8	13,223.8	61.3	8,012.1	37.2	317.9	1.5	
1957	147,171	174,422	1,687	20,083.0	12,233.7	60.9	7,714.8	38.4	134.5	.7	
1958	154,074	180,487	2,233	21,224.3	11,459.4	54.0	8,384.9	39.5	1,380.0	6.5	
1959	152,201	193,500	2,033	23,630.5	11,554.5	48.9	11,535.5	48.8	540.5	2.3	
1960	156,400	187,500	2,100	24,268.8	12,089.7	49.8	11,674.9	48.1	504.2	2.1	
1961	158,400	199,800	4,200	22,437.5	11,970.0	53.4	9,701.4	43.2	766.1	3.4	
1962	108,600	173,200	4,500	16,093.5	7,198.9	44.8	8,098.7	50.3	795.9	4.9	
1963	117,900	197,300	4,800	20,032.4	8,787.1	43.9	10,359.0	51.7	886.3	4.4	
1964	126,000	194,900	3,700	21,328.5	10,125.7	47.5	10,380.7	48.7	822.1	3.8	

Sources: (i) Statistical Digest of Eastern Nigeria, Official Document No. 22 of 1963, p. 57.

(ii) Annual Statistical Digest of Eastern Nigeria 1965, p. 58.

Percentage calculated.

Table 7.3

Non-Plantation Production of
Export Palm Oil and Palm Kernels
(E. Nigeria). 1955/56-1964/65

Year	Palm Oil (tons)	Palm Kernels (tons)
1955/56	172,542	185,198
1956/57	163,769	203,623
1957/58	167,134	193,029
1958/59	176,052	200,678
1959/60	176,936	200,477
1960/61	168,101	196,789
1961/62	158,512	199,155
1962/63	118,463	158,954
1963/64	134,311	185,627
1964/65	130,219	191,504

Sources: compiled from:

- (i) Annual Reports of the Eastern Regional Marketing Board, 1955-1959.
- (ii) Annual Reports of the Eastern Nigeria Marketing Board, 1960-1965.

Note: The Marketing Board Reports were for the period commencing 1st April to 31st March.

Expenditure by E.N.D.C. on Agricultural Projects, 1955/61; 1962/64 £
at 1957 Prices

Table 7.4

Year	Plantations							Other Projects		
	Oil Palm	Coconut	Cashew	Rubber	Cocoa	Total	Oil Mills	Cattle Ranch	Total all Projects	
1955	52,700	32,700	33,000	-	62,033	180,433	158,600	4,500	343,533	
1956	80,430	23,079	23,079	-	28,910	155,498	95,100	3,300	253,898	
1957	77,562	19,267	19,267	-	13,614	129,710	2,900	-	132,610	
1958	48,491	19,061	19,061	-	16,997	103,610	1,900	1,900	107,410	
1959	41,946	9,600	9,914	-	19,294	80,754	19,600	11,100	111,454	
1960	14,683	15,900	-	-	57,956	88,539	1,221,400	14,400	1,324,339	
1961	115,832	18,200	-	36,752	125,106	295,890	1,090,300	6,900	1,393,090	
Total	431,644	137,807	104,321	36,752	323,910	1,034,434	2,589,800	42,100	3,666,334	
% Pl. Total	41.7	13.3	10.1	3.6	31.3	100	-	-	-	
% all Projects	11.8	3.8	2.8	1.0	8.8	28.2	70.6	1.2	100	

2ND PLAN 1962/1964									
Year	Plantations							Other Projects	
	Oil Palm	Rubber	Cocoa	Total	Oil Mills	Cattle Ranch	Total all Projects		
1962	171,687	98,697	207,509	477,893	1,043,700	4,200	1,525,793		
1963	243,328	3336,828	334,634	614,790	929,400	10,200	1,554,390		
1964	513,751	508,606	286,487	1,308,844	-	-	1,308,844		
Total	928,766	944,131	828,630	2,701,527	1,973,100	14,400	4,689,027		
% Pl. Total	34.4	34.9	30.7	100	-	-	-		
% all Projects	19.8	20.1	17.7	57.6	42.1	0.3	100		

Sources: Plantations (i) Compiled from E.N.D.C. : Development Vol. 10, No. 27, July/Sept. 1966, pp. 57/60.
(ii) Annual Reports of the E.R.D.C. and E.N.D.C. 1955/1965.

Table 7.9

Palm Oil Output from E.N.D.C. Plantation Palm Fruit
as Percentage of Total Marketing Board Purchases

1955/56-1964/65

Year	Total Marketing Board Purchases (ton) (1)	Output from Plantation (ton) (2)	Col 2 as % Col 1 (3)
1955/56	172,983	341	(a)
1956/57	164,226	457	(a)
1957/58	167,751	617	(a)
1958/59	177,016	964	(a)
1959/60	178,333	1,397	(a)
1960/61	169,719	1,618	(a)
1961/62	160,693	2,181	1.4
1962/63	120,854	2,421	2.0
1963/64	139,412	5,101	3.7
1964/65	135,801	5,582	4.1

Source: Column (1) - see Table 7.3.
Column (2) - compiled from E.N.D.C. Annual Reports, 1955/56-1964/65.
Percentage calculated.

Note: (a) = less than 1%.

Table 7.10

Proportion of the Grades of Palm Oil Purchased by
the E. Nigeria Marketing Board 1955-1962

Year	Special Grade	Grade I	Grade II	Grade III
1955	79.0	20.1	0.4	0.5
1956	80.0	19.1	0.1	-
1957	77.2	22.7	0.1	-
1958	83.7	16.2	0.1	-
1959	81.2	18.3	0.5	-
1960	79.7	20.0	0.3	-
1961	81.8	18.1	0.1	-
1962	85.1	14.7	0.2	-

Sources: (i) Fifth Annual Report of the Eastern Regional Marketing Board 1st Jan-31st Dec. 1959, p. 20.
(ii) Eighth Annual Report of the Eastern Nigeria Marketing Board 1st Jan 1962-31st Dec. 1962, p. 34.

Table 7.11

Palm Products Producer Prices and Index of Producer Prices, E. Nigeria, 1955-65
Base Year 1955

YEAR	PALM OIL					PALM KERNELS				
	Special Grade £/ton	Index 1955=100	Grade I £/ton	Index 1955=100	Grade II £/ton	Index 1955=100	Grade III £/ton	Index 1955=100	£/ton	Index 1955=100
1955	60	100	43	100	36	100	28	100	31	100
1956	54	90	43	100	36	100	28	100	31	100
1957	54	90	43	100	36	100	28	100	31	100
1958	53	88.3	43	100	34	94.4	27	96.4	30	96.8
1959	52	86.7	43	100	37	102.7	29	103.6	30	96.8
1960	52	86.7	43	100	37	102.7	29	103.6	30	96.8
1961	48	80.0	40	93.0	34	94.4	26	92.9	29	93.5
1962	40	66.7	34	79.1	30	83.3	26	92.9	25	80.6
1963	40	66.7	34	79.1	30	83.3	26	92.9	25	80.6
1964	41	68.3	35	81.4	31	86.1	26	92.9	27	87.1
1965	41	68.3	35	81.4	31	86.1	26	92.9	27	87.1

Sources: Prices (i) Nigeria, Annual Abstract of Statistics, 1964, p. 106.

(ii) Central Bank of Nigeria, Economic & Financial Review, Vol. 4, No. 1, June 1966, p. 68.
 Index calculated.

Table 7.12

European Ports (c.i.f.) Prices of Nigerian
Palm Products 1955 - 1965

Year	Palm Oil £/ton	Palm Kernels £/ton
1955	82.0	51.7
1956	92.9	52.8
1957	92.1	51.2
1958	82.9	56.0
1959	86.5	70.2
1960	81.4	52.4
1961	82.9	49.6
1962	76.2	49.5
1963	79.0	55.5
1964	84.8	54.7
1965	97.8	65.0

Source: F.A.O. Production Yearbook, Vol. 21, 1967,
pp. 552, 556.

Table 7.18

Regional Distribution of
Manufacturing Establishments 1960-1964

Year	Fed. Territory	North	East	West	Mid-West	Total
1960	28	4	9	10	-	51
1961	12	7	16	15	-	50
1962	12	5	13	20	-	50
1963	14	16	8	14	3	55
1964 (Mar.)	5	10	10	12	1	38
Total	71	42	56	71	4	244

Source: Fed. Parliamentary Debates, House of Representatives,
Vol. 15(b) 1964, p. 1136.

Table 7.19

Regional Distribution of
All Manufacturing Plants in Nigeria as at the end of 1965

Region	No. of Manufacturing Plants
Fed. Territory	352
East	256
West	170
Mid-West	76
North	162

Source: Compiled from Fed. Ministry of Information,
Industrial Directory 1965.

Table 7.20

Persons Engaged in the E. Nigerian Industries as at March 1962

Industries	No. of Plants	Grades of Employment					Total
		Managerial	Clerical	Skilled & Semi-skilled	Unskilled		
Coal Mining, Petroleum & Quarrying	3	586	713	2,796	2,835	6,390	
Manufacture of Grain & Bakery Products	10	13	39	265	90	407	
Breweries & Tobacco Manufacture	5	36	103	517	255	911	
Textiles and Footwear	2	2	9	59	2	72	
Sawmills & Wood Mills	4	13	45	539	244	841	
Manufacture of Furniture & Fixtures	4	9	14	193	40	256	
Printing and Publishing	17	30	69	352	88	539	
Manufacture of Rubber Products (Tyre re-trading)	3	4	21	66	37	128	
Industrial Chemicals including Fertilizers	2	3	4	30	25	62	
Processing of Vegetable Oils & Fats (Oil Mills)	105	48	305	1,014	1,304	2,671	
Manufacture of Chemical Products	5	67	91	547	337	1,042	
Manufacture of Pottery	2	3	4	67	30	104	
Manufacture of Cement & Concrete Products	3	26	56	630	158	870	
Iron & Steel & Manufacture of Metal Products	4	20	44	163	105	332	
Boat Building & Repairs & Bicycle Assembly	2	2	21	136	47	206	
Total, all industries	171	862	1,538	7,374	5,597	15,371	

Source: Annual Statistical Digest 1965, E. Nigeria, p. 55.

Table 7.21

Expenditure on Fixed and Working Capital
in E.N.D.C. Plantations and Oil Mills 1955-1964
at 1957 Prices

Plantation/ Oil Mills	Total Expenditure £ (1)	Fixed Capital £ (2)	Working Capital £ (3)	Col 3 as % Col 1 (4)
Oil Palm	1,360,410	563,600	796,810	58.6
Cocoa	1,152,540	224,500	928,040	80.5
Rubber	980,883	58,900	921,983	94.0
Cashew	104,321	63,721	40,600	40.0
Oil Mills	4,562,900	1,263,800	3,299,100	72.3

Sources: Column (1) Computed from Table 7.4.

Column (2) Ninth Annual Report of the Eastern Nigeria
Development Corporation and Accounts dated
31st March, 1964, pp. 35-54.

Column (3) Column (1) - Column (2).

Percentage Calculated.

Table 7.22

World Production and Prices of Vegetable Oils
and Fats
Average 1963-65 compared with 1955/56

ITEMS	Average 1963-65	1955/56	Col 1 as % Col 2
<u>Palm Oil</u>			
Production ('000 metric tons)	1,246	1,160	107.4
Prices (U.S. \$ per metric ton)	250	237	105.5
<u>Palm Kernel Oil</u>			
Production ('000 metric tons)	419	426	98.4
Prices (U.S. \$ per metric ton)	278	257	108.2
<u>Marine Oil and Fats</u>			
Production ('000 metric tons)	28,130	22,185	126.8
Prices (index av. 1952/54 = 100)	95	98	97.4
<u>Ground-nut Oil</u>			
Production ('000 metric tons)	2,410	1,360	177.2
Prices (U.S. \$ per metric ton)	303	373	81.2
<u>All fats and oils</u>			
Production ('000 metric tons)	28,130	20,500	137.2
Prices (index av. 1952/54 = 100)	96	100	95.6

Source: F.A.O. Agricultural Development in Nigeria 1965-80,
 Rome 1966, p. 121.

Note: Prices of palm oil, palm kernels and groundnut oil are those
 of Nigeria and Congo (bulk) c.i.f. European ports.

Table 7.23

Nigerian Export Production of Palm Oil and Palm Kernels
as a Percentage of World Production, 1954/55-1965

'000 metric tons

YEAR	PALM OIL			PALM KERNELS		
	World Production (1)	Nigerian Production (2)	Col 2 as % Col 1 (3)	World Production (1)	Nigerian Production (2)	Col 2 as % Col 1 (3)
1954/55	1,190	450	37.8	1,000	470	46.9
1955/56	1,170	420	35.9	960	425	44.2
1956/57	1,230	460	37.3	1,040	473	45.5
1957/58	1,180	410	34.7	990	419	42.3
1958/59	1,230	457	37.2	1,070	468	43.7
1959/60	1,220	433	35.5	1,030	435	42.3
1960/61	1,140	423	37.1	1,030	429	41.6
1962	1,130	403	35.7	1,012	368	36.4
1963	1,340	510	38.1	1,033	420	40.6
1964	1,359	515	37.9	1,062	408	38.4
1965	1,336	530	39.7	1,105	461	41.8

Source: F.A.O. Production Yearbooks, Vol. 14, Rome 1960, p. 115;
 Vol. 16, 1962, p. 115; Vol. 21, 1967, p. 213.

Percentage calculated.

Table 7.24

Overseas and Local Sales of Palm Products by the
Nigerian Marketing Boards 1959-1965

<u>PALM OIL</u>				
Year	Total Purchase	Overseas Sales	Internal Sales	Col 3 as % Col 1
	(1)	(2)	(3)	(4)
1959	190,243	174,048	9,260	4.9
1960	190,105	186,711	14,651	7.7
1961	173,433	167,563	14,283	8.2
1962	128,547	126,278	15,699	12.2
1963	149,031	111,027	13,073	8.8
1964	147,885	163,991	13,331	9.0
1965	164,158	110,352	7,127	4.3
<u>PALM KERNELS</u>				
1959	427,863	433,050	2,170	5.0
1960	423,203	397,850	1,619	3.8
1961	430,229	448,275	1,553	3.6
1962	362,149	378,550	2,640	7.3
1963	413,696	350,300	2,688	6.5
1964	401,477	460,551	2,807	7.0
1965	449,232	369,600	4,973	11.1

Source: Nigerian Trade Journal, Vol. 14, No. 2,
April/June, 1966, p. 66.

Note: Sales of palm oil and palm kernels include stocks
carried forward from previous year.

Table 7.25

Capital-output Ratios, Capital Requirement per Worker, and Net Value Added per Worker in Selected Large and Small Scale Industries in India, 1956

Industry	Capital-output Ratios (Ratio of assets to value added)		Capital Requirements per worker (R'000)		Net Value Added per worker (R'000)	
	Large- Scale	Small- Scale	Large- Scale	Small- Scale	Large- Scale	Small- Scale
Paint & Varnishes	1.78	1.52	89	22	5.9	4.7
Tanning	2.92	0.53	37	4	1.3	1.1
Paper & paper board	2.53	1.94	81	17	3.2	2.1
Cotton Textile	1.70	1.51	34	7	2.0	1.4
Vegetable Oil	1.82	0.91	36	8	1.7	1.6
Leather manufacture	2.72	0.61	41	9	2.4	2.2
General & electrical engineering	2.33	1.50	48	11	2.1	0.8

Source: Economic Weekly, vol. 6, Jan. 1958, pp. 165/6.

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