NIGERIA
Development or Underdevelopment ?

(Selected Seminal papers)

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Chapter Thirteen

FOOD POLICY AND NATIONAL DEVELOPMENT: THE NIGERIAN CASE

INTRODUCTION:

From 1975, the Nigerian economy resorted to massive food imports in order to feed her population. With dwindling petroleum earnings, it is becoming increasingly difficult to pay for food imports. Moreover, the economy is basically agricultural implying that if available resources are efficiently utilized, food imports could become a thing of the past. Apart from the political implications of being a food dependent nation, it has been established by some economists that the failure of food supplies to keep pace with the growth of food demand could adversely affect the development process.

Today, the rate of price inflation on food items is getting out of control - it is possible to measure the general inflation rate by looking at the rate of increase in food prices. It is now an open secret that the economy is no longer both adequate and self-sufficient in food production. Beginning in 1970, government not only designed several projects and programmes in order to increase domestic food production but also expenditures (recurrent and capital) on agriculture, were quite high during the first, second and third development plan periods.

This paper attempts:

1. to roughly establish when the Nigerian economy started as a dependent food economy;
2. to analyse the effectiveness of the various government policies meant to reverse the declining trend of food production;
3. examine two projects under the Green Revolution programme and
4. make projections regarding the country's food demand up to the year 1990 and beyond.

FRAMEWORK OF ANALYSIS:

The framework is partly derived from a set of concepts of agricultural "self-sufficiency", agricultural "adequacy" and the agricultural "lag" (Johnston and Mellor, 1961, pp.566-580; Johnston and Kilby, 1975, chaps. 1-4). Food "self-sufficiency" is defined as the ability of domestic food production to grow faster than increases in the demand for food. Implicit in this definition, is an exportable net food balance while a loss of food "self-sufficiency" means food dependency. If food supplies fail to expand at the same rate with the growth of demand, the result is in net imports or a rise in food prices. Because of the severe political and economic ramifications of a huge rise in food prices, domestic shortages could either be off-set by increased food imports or decreased exports provided that foreign exchange or credits are available.

Food imports involves all import commodities, excluding live animals, which fall into category "O" in the Standard International Trade Classification (SITC). The 'formal' presentation of the framework used is in the appendix.

In terms of food policy, there are several approaches in classifying food policies and strategies. They include:

(1) the Institution-building approach (IB);
(2) typology of policy consisting of Government Directed Investments (GDI); and Extension Methods (EXT); both (1) and (2) could also be cross-classified with unimodal and bimodal strategies.

The institutional-building approach (IB) involves a study of political, social and administrative elements in the evaluation of government agricultural policies. It takes for granted that underlying agricultural development programmes are organizations. If the programmes are successfully administered, the organizations that carry them become institutions. That is, the organizations survive to become viewed by their environment as having intrinsic value and the innovative patterns they foster become normative for the society (Katz, 1970, p.794). An important element of this approach concerns the attempt to evaluate administrative capability for agricultural development. This has to do with (a) the establishment of organizational objectives; (b) the adequacy and efficiency with which the organizational system changes inputs to

outputs; and (c) how well the environmental linkages provide inputs, materials and behaviour. The IB approach aids in holistically evaluating all the three aspects with its focus on the instrumental purpose of institutionalizing the organizational system and its mission of innovation.

Another analytical approach used for characterizing food performance relates to an examination of types of food strategy and policies. A suitable analytical method must involve simultaneous consideration of the objectives to be furthered by a food strategy and the means (policies and programmes) by which those objectives can be reached. A strategy could be defined as a mix of policies and programmes that influence the direction as well as the rate of growth. It is necessary that any strategy for food development should consist of (1) investment in infrastructure, irrigation and drainage facilities and rural roads; (2) programmes to enhance commodity marketing and the distribution of inputs; (3) programmes of institution-building (for example, food research, etc.) and (4) policies dealing with prices, taxation and land tenure. The fundamental objective of any strategy is the stress on action to change the production possibilities to farmers by modifying their institutional, technical and economic environment. (For details, see Johnston and Kilby, 1957; Olayide, 1980; Wells, 1974; Ojo, 1984; Idachaba, 1984).

There are two components of policy that may characterize governments' allocative efforts: Social overhead Capital (SOC) and Directly Productive Activities (DPA). Social Overhead Capital which includes capital intensive and capital extensive infrastructure is difficult to measure directly. Within the DPA, two efforts of government may be identified. They include: Government Directed Investments (GDIs) and Extension Methods (EXT) to investments. Government Directed Investments are seen as involving direct government management of the productive process. The GDIs are generally restricted to discrete areas and concentrate fairly large quantities of capital and managerial resources on a relatively small number of farmer participants. On the other hand, the EXT approach involves efforts which are largely directed at peasant farmers acting in their usual environment. This method spreads a smaller level of resources over a wider area and for larger number of farmers, for example, the development of small-holder's tree crops and package

demonstrations. Extension activities include a wide range of activities directed at a peasant farmer such as fertilizer distribution, demonstrations, pest and disease control, etc.

Unimodal and bimodal strategies are classified by the expected effects of an agricultural policy on income distribution. A unimodal strategy aims at the progressive modernization of the entire agricultural sector while a bimodal one involves concentration of resources in a small number of farmers with the intent of raising their incomes substantially. A unimodal strategy aims at increasing the incomes of all farmers in a country as opposed to raising the incomes of few farmers (Johnston and Kilby, 1975, p.132).

The GDI and Extension approaches could be cross-classified with unimodal and bimodal strategies. This approach was used to classify Nigeria's agricultural policies in the 1960-68 plan (Wells, 1974, chaps. 8-12).

Wells' results indicated that virtually all GDIs implied a bimodal strategy because of low spread effects and the Extension investments slightly mirrored a unimodal approach. A more recent attempt at classifying government policies and strategies using the kind of framework discussed above is by Ojo (1989) who examined the contents and adequacy of government policy strategies adopted to reverse the serious food problems in Nigeria. An attempt will be made to characterize governments' policies toward the food crop sector using the above framework. This approach is adopted because building a 'model' of agricultural or food policy in development within the Nigerian context is not an easy task.

FOOD INDEPENDENCE OR DEPENDENCE?

The state of Nigeria's agriculture today is an outcome of both ecology and history. The different agro-climatic conditions account for the diversified nature of agricultural production. In the dry savanna of the North and the intermediate savanna of the Middle Belt, Sorghum, maize, millet, rice, cowpea, groundnuts, and cotton are grown as the principal crops. In the rain forest of the South, the main food and agricultural products include yam, cassava, cocoyam, palm produce, cocoa and rubber. In the past when production was solely for subsistence, Hausa peasants produced millet and sorghum

as their main food staples. The northern food economy was based on cereal crops, which were indigenous to the sahelian zone. On the other hand, the food staples of the south were mainly roots and tubers (Onwueme, 1978, chaps. 1-7; Hellcrinrt, 1966, chaps. 4-5). When Nigeria had contact with the outside world, that is, around the 19th century, agriculture became more diversified. Both the north and south had new crops introduced into their production pattern.

In Nigeria, the area under crops is small when compared with arable land. The country has a surface area of 98.3 million hectares (12%) being cultivated, and 32 million hectares is registered as arable land (Third National Development Plan, 1975-80, 1975, p.63). Part of the arable land is fallow land which is a result of the "bush fallow" system of cultivation in which the "rotation of land" instead of the rotation of crops is the prevailing practice. According to the 2nd National Plan, 28.4 million hectares of land currently classified under forests and pastures is arable land, thus, bringing the total arable land to 60.4 million hectares (2nd National Plan, 1970-74, 1970, pp.103-105).

It is important to state that almost the entire food output of Nigeria is produced by small peasant farmers.

> "What makes the Nigerian experience so interesting to the economist is the tremendous role played by 'traditional' agriculture in the development process" (Helleiner, 1966, p.45).

The Nigerian peasant farmers produce food and cash crops for export in a single farm so that the production of export crops often competes with that of food crops for the same resources of family labour and land. Peasant farming in Nigeria has been the study of several authors (Hill, 1968; Galleti, Baldwin, and Dina, 1956; Norman, 1973; Okurume, 1969). It must be said that the country's agriculture had developed prior to her being colonized by Britain and had little or no assistance from Britain during the colonial period, a period characterized by increased food production and export boom.

THE COLONIAL PERIOD:

The colonial period, for this paper, is deemed to be from 1900 to 1960. Most economists have agreed that this period was characterized by a rapid export expansion with occasional periods of

instability. According to Helleiner, by 1929, export value had increased more than sevenfold, export volume fivefold implying compounded annual growth rates of 7 and 5 per cent respectively. Export production in the same period amounted to 5 and 7 per cent of gross domestic product (Helleiner, 1966, p.5). It was therefore not surprising when Myint formulated, on theoretical grounds, a "surplus land and labour" theory of indigenous led development by applying Adam Smith's "Vent-for-surplus" theory of international trade to developing countries (Myint, 1958, pp.317-337; 1965, chaps. 1-2).

Inherent in the "Vent-for-surplus" model is the fact that the surplus productive capcity allows a farmer to produce export crops in addition to subsistence crops and hence enables export production to be expanded with very little uncertainty. Several works using the Vent-for-surplus model have appeared on the export sector of the Nigerian agricultural scene (Hogendorn, 1970, pp.30-51; Berry, 1970, p.16; Eicher, 1970, p.12).

While the annual rate of growth of population increased crop output expanded about as rapidly as population growth and food imports remained at a low level. The performance of the food sector was more than adequate during the colonial period. Carl Eicher (1970, p.13) admitting that not much research had been done on domestic food crops, nevertheless concluded that:

(a) food production expanded in line with population rates;*
(b) the country was virtually self-sufficient in staple food production,
(c) prices were relatively stable during the period, and
(d) a lack of effective demand was a major constraint.

It could be said that during the colonial period, the long-term growth process of the country was facilitated by both government infrastructure and by millions of peasant farmers. Hence agriculture served as the leading sector of the economy.

The composition of food imports during this period is presented in table 13.1 above: this period staples were not imported. In 1937, fish imports stood at N1.28 million and by 1954 it had increased to N11.318 million. After this period, there were slight

** Between 1940 and 1990, annual growth rate of population increased from about 0.6% to 2.3%*

fluctuations in fish imports. The import of sugar followed similar patterns of increase with slight decreases during the war years. For flour (wheat) the trend was upward until 1963 when the country started her own flour industry; other imported food items included biscuits, cake, milk, salt, and cream which for the most part were destined to the urban areas of the economy.

The value of food imports and its share in total imports is presented in Table 13.2. The value of food imports which stood at N25.9 million in 1955 rose to N36.3 in 1958 and by 1959 it stood at N41.7 million. By 1960, food imports had increased to N86.0 million representing an annual compound growth rate of 7.1% between 1955 and 1960. The share of food imports to total imports was 9.5% in 1955. It declined slightly in 1956 and by 1959 it was 11.7%.

Table 13.1 ***NIGERIA: COMPOSITION OF FOOD IMPORTS, 1937-1960 (in value, N million)***

Year	Fish	Flour (Wheat)	Sugar	Salt
1937	1.128	0.120	0.036	0.528
1938	0.798	0.096	0.216	0.528
1939	0.480	0.074	0.160	0.478
1940	0.104	0.062	0.120	0.654
1941	0.018	0.072	0.074	0.540
1942	0.014	0.096	0.124	0.948
1943	0.006	0.086	0.102	0.864
1944	0.020	0.154	0.124	0.884
1945	0.052	0.148	0.188	0.812
1946	0.182	0.192	0.240	1.032
1947	0.446	0.248	0.250	1.350
1948	0.558	0.410	0.428	1.552
1949	0.754	0.888	0.826	1.682
1950	1.318	1.344	1.330	1.594
1951	3.786	1.622	1.666	2.910
1952	6.326	2.124	2.044	2.914
1953	8.934	2.560	2.740	2.754
1954	11.318	3.472	4.216	2.818
1955	9.680	3.532	4.878	3.070
1956	13.528	4.064	5.106	3.350
1957	16.968	4.668	5.156	3.264
1958	15.692	4.234	6.702	3.594
1959	17.434	5.292	6.420	3.546
1960	17.658	6.308	6.372	3.730

Source: Helleiner, G. K. Peasant Agriculture, Government And Economic Growth in Nigeria, 1966, pp.516-520

Between 1955 and 1960, the share of food imports to total imports grew at an annual compound rate of 3.2%. It is interesting to note that during the colonial period, staples were not imported; food imports were mostly items that the economy could not produce and most were destined to foreign consumers in Nigeria. In fact, during the entire period, food exports completely outweighed food imports. By whatever standards, the food crop sector appears to have performed adequately.

TABLE 13.2: ***NIGERIA: VALUE OF FOOD IMPORTS, FOOD EXPORTS AND SHARE OF FOOD IMPORTS TO TOTAL IMPORTS, 1955-1960***

Year	Food Import1	Food Export2	Total Imports	Food Imports as %of Total Imports
1955	25.9	61.1	272.2	9.5
1956	32.1	56.5	305.5	10.5
1957	36.7	62.1	304.9	12.0
1958	36.3	64.4	332.5	10.9
1959	41.7	87.7	356.8	11.7
1960	47.8	86.0	431.8	11.1

Source: Annual Abstract of Statistics, Federal Office of Statistics, Lagos. Various years.

Notes: 1. Food imports included: Sugar, cream, cake, milk, beef, confectionery, wheat, fish, salt and biscuits.
2. Food Exports included: palm oil, groundnut oil, fresh bananas an beniseed.

INDEPENDENCE PERIOD, 1960-1966:

Tables 13.3, 13.4 and 3.5 below give a sketch of the value and composition of food imports. Between 1960 and 1966, food imports increased by 8%. Food imports in value terms, which stood at N47.8 million in 1960, decreased considerably to N45.4 million in 1961 and jumped to N51.6 million by 1966. Food imports grew between 1960 and 1966, not at an alarming rate but at a compound rate of 1.3%. On the average, the share of food imports to total imports from 1960 to 1966 was 1.4% while the growth of the share of food imports to total imports was 1.6%. Hence the share of food imports to total imports was quite reasonable. However, at this point, food imports did not consist of staple foods as most of the imported food included fruits, sugar, milk, fish, beverages and beef

(see Table 13.3). The foods were destined to the urban area and were foods that could only be bought by those with high incomes. It could thus be stated that domestic food production was still adequate in meeting the needs of the people, whether such foods had nutritional value or not is not the pre-occupation of this paper.

TABLE 13.3 : *NIGERIA: VALUE OF TOTAL IMPORTS, FOOD IMPORTS AND SHARE OF FOOD IMPORTS IN TOTAL IMPORTS, 1960-1966 (N million)*

Year	Food Imports (Fm)	Total Imports (M)	Food Imports as % of Total Imports
1960	47.8	431.8	11.1
1961	45.4	445.0	10.2
1962	47.0	406.4	11.6
1963	43.8	415.1	10.6
1964	41.2	507.8	8.1
1965	46.1	550.3	8.4
1966	51.6	512.7	10.1

Source: Central Bank of Nigeria: Economic and Financial Review Various Issues.

TABLE 13.4: *NIGERIA: COMPOUND ANNUAL GROWTH RATES (in %)*

Item	1960 - 1966
Food Imports	1.3
Total Imports	2.9
Share of Food Imports	-1.6

Computed from Table 13.3 above.

TABLE 13.5: *NIGERIA: COMPOSITION AND QUANTITIES OF FOOD IMPORTS, 1960-1966 ('000 metric Tons)*

Year	Wheat	Fruits	Sugar	Milk	Fish	Beverages	Beef
1960	15	12	145	10	30	5	15
1961	21	14	151	12	36	6	18
1962	27	11	195	15	40	7	21
1963	49	12	131	15	44	8	24
1964	36	8	101	20	48	10	26
1965	54	12	247	23	52	10	29
1966	177	12	151	25	58	10	30

Sources: (1) Digest of Statistics, Federal Office of Statistics, 1964
(2) Central Bank of Nigeria, Agricultural Division, Lagos.

The available data did confirm the assertion of early researchers that the Nigerian food sector was adequate and that by whatever means, the food sector had kept pace with population growth. During this period, domestic food prices fluctuated widely and food prices increased slightly from 1960 until the first military coup of 1966 (Wells, 1974, p.69).

> "Nigeria is, happily, still in a state of development within which food supplies are not a critical problem" (Helleiner, 1966, p.141).

Helleiner was quite optimistic regarding the food sector of Nigeria. He emphasized the fact that there were unutilized land, underutilized village labour and unrealized potential for productivity increases on existing food land. Though, his optimism survived the 1960-66 period, available data fail to confirm his position in recent years. (Helleiner, 1966, pp.141-143).

Staple food production has expanded in line with population growth for a time after 1960. Food imports were only roughly 10% of the total value of all imports over the entire period 1954-67. Three-fourths of the food imports in 1966 and 1967 were the processed form of four nutritionally "superior" foods -fish, wheat and flour, milk and cream, and sugar (Eicher and Johnston, 1970, p.379). Increased food output must not only keep pace with population growth but also with the increasing urban population and the rise in consumption patterns created by increasing per capita incomes. The agricultural sector must interact with other sectors in order to meet the food requirements of the economy.

Rolf Gusten explored the relation between non-agricultural growth, the expansion of food production, and price increases by using a hypothetical model that estimated the growth of the Nigerian economy after 1968. Gusten's analysis examined the target rate of growth of 6% per annum which was seen in an early pre-planning exercise for the 1968-72 development plan. He attempted to focus on the impact of this growth target on the supply and demand of foodstuffs with the assumption that much growth will be attained through the shifting of workers from the domestic agricultural sector to non-agricultural activities where average and marginal labour productivity (output per person) is three times as high as in agriculture. His main

objective was to project a rate of price increases for food associated with a given target growth rate and structural parameters that mirrored the Nigerian economy (Gusten, 1967, pp.11-32). Though the Gusten model was criticized on several grounds (Wells, 1974, pp.69-73), it nevertheless represented one of the most serious analytical efforts to investigate the implications of the possible failure of the food sector to keep pace with the growth of the Nigerian economy.

There is no doubt that performance during this period was satisfactory, especially in staple food production. Also, food imports comprised a small proportion of the total value of imports. Even in the area of "nutritionally" superior foods, progress was made especially in egg production. The major constraint here was effective demand; domestic egg production expanded to a point where in the early 1960s, it replaced imports and reduced the price of eggs to consumers at half the original price. It was observed then that the expansion in egg production created an egg "marketing problem". However, the problem was not that of inefficiency but the reflection of a lack of effective demand (Eicher and Johnson, 1970, p.381).

In general, the failure of food prices to rise any more rapidly than the overall price level during the independence period gives the impression that neither the production nor the distribution of food supplies constituted the production nor the distribution of food supplies constituted a serious bottleneck.

PETROLEUM BOOM, THE CIVIL WAR PERIOD AND BEYOND:

The period immediately after the Civil War (1970 and after) was characterized by increased export earning from petroleum. Two significant events took place during this period: (1) for the first time, maize and rice became imported food items from 1971 and (2) the economy started the export of 'processed' food consisting of cocoa butter, cocoa cakes, groundnut cake and groundnut butter.

The significance of the import of maize arose from its importance as a staple food in a country that was considered to be "self-sufficient" in maize production while (2) depicted the economy as capable of not only exporting raw cocoa and groundnuts

but also that these cash crops could be transformed into food items before export. Between 1967 and 1970, food exports grew at an annual compound rate of 19.4% while food imports grew at 10.1%. For the entire period, food exports in value terms outweighed food imports. Available data indicated that the economy became a net importer of food in 1975 when food imports exceeded food exports by N277.1% million (Table 6).

From 1975, the Nigerian economy became dependent on food imports. Hence, 1975 marked the period when the economy lost her "self-sufficiency" (N>0) in food production. Net food import which was N277.1 million in 1975 subsequently rose to N1078.3 million in 1979 and by 1982 it stood at N2028.0 million. The loss of food "self-sufficiency" sustained for a period of five years (1975-80) implies food dependency.

TABLE 13.6: ***NIGERIA: VALUE OF FOOD EXPORTS AND IMPORTS, 1975-83 (N million, Constant Prices)***

Year	Food Exports (Fx)	Food imports (Fm)	Net Food Imports (Nt)
1965	99.4	46.1	-53.3
1966	111.0	51.6	-59.4
1967	93.6	42.6	-51.0
1968	104.0	28.4	-76.4
1969	104.0	41.7	-62.3
1970	107.7	57.7	-50.0
1971	107.5	87.9	-19.6
1972	125.7	95.1	-30.6
1973	160.9	126.3	-34.6
1974	198.9	154.8	-44.1
1975	21.7	298.8	227.1
1976	22.8	440.9	418.1
1977	62.0	736.4	674.4
1978	31.4	1020.7	989.3
1979	27.6	1105.9	1078.3
1980	25.4	1437.5	1412.1
1981	85.6	2115.1	2029.5
1982	20.2	2048.2	2028.0
1983	NA	1477.9	-

Sources: Complied by the author from:

(1) Central Bank of Nigeria, Research Dept., Lagos
(2) Federal Government Press, Economic and Financial Review 1978, Lagos, 1979.

Notes: (1) Nt <0 implies "self-sufficiency", food is exported
(2) Food exports include cocoa butter, cocoa powder, cocoa cake and groundnut cake; from 1974 only these were exported.
(3) NA = not available; 1983 figures are estimates by the Central Bank.

In 1971, four thousand metric tons of maize and two thousand metric tons of rice valued at N.35 million and N.05 million respectively were imported into the country. In 1978, the value of both maize and rice imports stood at N3.650 million and N249.2 million respectively. During the Civil War, the share of food imports to total imports recorded an average rate of 9.1% which is fairly close to the rate characterized by normal periods (Ekpo, 1985). The highest rate of the share of food imports to total imports between 1965 and 1980 was 14.8% in 1979. As staple foods became part of food imports the share of food imports to total imports changed. This phenomenon then shows that not only are "nutritionally" superior foods being imported as a result of income changes but that the "poor" had become a consumer of imported foods. It seems, therefore, that between 1965 and 1974, the Nigerian economy was "self-sufficient" in domestic food production implying that food was also exported.

On the other hand, from 1975, the Nigerian economy became a positive net importer of food, losing her food "self-sufficiency" and hence becoming a food dependent economy. That food "self-sufficiency" was not lost until 1975 raises the question as to whether the situation was due to petroleum boom or agricultural failure or both.

Furthermore, it raises the question of government policy toward the food crop sector and her response before and after the loss of food "self-sufficiency".

Government food policy will be analyzed in part III.

The introduction of import restrictions in April, 1982 reduced food imports in 1983 to N1477.9 million, its share of total

imports being 15.2% (Table 7). "Two years of import restrictions have forced changes in the composition of food imports away from high-value items to bulk commodities. Staple foods - including grains, sugar, animal and vegetable oils, daily products and fish were 62 per cent of food imports in 1981, but now they make up about 85 per cent" (sub-Saharan Africa, 1984, p.8). The decline in world prices partly explains the decrease in the value of Nigeria's food imports.

TABLE 13.7 (a): ***NIGERIA: VALUE OF FOOD IMPORTS AND SHARE IN TOTAL IMPORTS, 1965-1983 (N Million, Constant Prices)***

Year	Food Imports	Total Imports	Food Imports as % Total Imports
1965	41.6	550.3	7.6
1966	51.6	512.7	10.1
1967	42.6	445.6	9.6
1968	28.4	388.9	7.3
1969	41.7	496.8	8.4
1970	57.7	523.7	11.0
1971	87.9	1068.9	8.2
1972	95.1	991.4	9.6
1973	126.3	1224.8	10.3
1974	154.8	1737.3	8.9
1975	298.8	3721.5	8.0
1976	440.9	5148.5	8.6
1977	736.4	7093.7	10.4
1978	1020.7	8211.5	12.4
1979	1105.9	7472.5	14.8
1980	1437.5	9095.6	15.8
1981	2115.1	12919.6	16.4
1982	2048.2	12565.5	16.3
1983	1477.9	9723.0	15.2

Sources: (1) Federal Office of Statistics, Lagos
(2) Central Bank of Nigerian, Logos
(3) Federal Government Press, Economic and Statistical Review 1978, Lagos, 1979

TABLE 13.7(b): *NIGERIA: IMPORT SELECTED FOOD ITEMS BY QUANTITY AND VALUE, 1980-83*

Commodity	1980 1000 Tons	U$ Million	1981 1000 Tons	U$ Million	1982 1000 Tons	U$ Million	1983 1000 Tons	U$ Million
Meats and Preparation	35	92	37	98	40	101	30	75
Dairy Produce	-	293	-	270	-	272	-	250
Fish Preparation	-	359	-	505	-	400	-	400
Wheat & Flour	1176	219	1517	297	1375	235	1400	230
Rice	394	165	685	331	651	230	715	227
Corn	168	26	293	43	345	43	50	7
Sugar (refined)	655	426	895	485	950	312	900	295
Vegetable Oil	189	137	260	167	383	189	300	150

Source: United States Department of Agriculture (USDA), Sub-Saharan Africa, Outlook and situation Report, July, 1984, p.8.
Notes: Tons are in metric

Trends in Food Production:

The performance of the food crop sector during this period is summarized in Tables 13.8, 13.9, 13.10 and 13.11. Between 1974 and 1983, aggregate food production increased by 1.8% while per capita food production registered a negative compound growth rate of -1.4%. Both rates are far below the growth of population. Moreover, agricultural exports also declined confirming partly that farmers did not shift from producing food to producing export crops (see Tables 13.8 and 13.9).

TABLE 13.8: *NIGERIA: INDICES OF AGRICULTURAL AND FOOD PRODUCTION POPULATION AND PER CAPITA PRODUCTION, 1974-1983 (1969-1971 = 100)*

Year	Total Agricultura Production	Total Food Production	Per Capita Agric. Food	Per Capita Food Prod.	Production
1974	104	103	91	91	112.9
1975	107	107	92	92	116.5
1976	110	110	91	91	120.2
1977	112	113	90	90	124.1
1978	117	117	91	91	128.1
1979	121	122	91	92	132.3
1980	127	128	93	93	136.7
1981	127	128	89	90	146.2
1982	131	132	89	90	146.2
1983*	120	121	79	80	15.2

Source: United State Dept. of Agriculture: World Indices of Agricultural and Food Production, 1974-83, July, 1984.

Notes: (1) Indices are computed from the values of aggregate production at 1969-71 constant prices.
(2) 1983 figures are preliminary.

TABLE 13.9: *NIGERIA: COMPOUND GROWTH RATE FOR TOTAL AGRICULTURAL, FOOD PRDODUCTION PER CAPITA, AND POPULATION (in %)*

ITEMS	1974-1983
Total Agricultural Production	1.6
Total Food Production	1.8
Per Capita Agricultural Production	-1.6
Per Capita Food Production	-1.4
Population	3.3

Source: Computed from Table 13.8

The production of specific food crops is also discouraging. The annual variation in the production of selected food crops is summarized in Table 10 below. Between 1974-83, except for rice paddy, all crops showed rates of increase that is below the population growth rates. In fact, millet and sorghum both have negative growth rates.

It was shown elsewhere that declining domestic food production was due to falling hectares implying that labour was being lured from rural areas to urban areas. It was also shown that modern practices were not being utilized by farmers (Ekpo, 1984 C). Regarding calorie and protein supply, the pattern is inadequate. Except for the period 1961-65, calorie and protein supply are below minimum requirements (see Table13.12).

GOVERNMENT FOOD POLICIES AND STRATEGIES

From available evidence apart from yearly budget allocations to the agricultural sector there was little effort by government to provide staple foods. Three NAFPP national centres were established at Ibadan, Samaru and Umudike while five zonal substations were also opened in Bendel, Anambra, Kano, Borno and Niger Sates.

Table 13.10: NIGERIA: ANNUAL VARIATION IN THE PRODUCTION OF SELECTED FOOD CROPS, 1974 - 1983 (%)

Year	Rice Paddy	Corn	Millet	Sorghum	Cassava	Yams	Plantains	* Raw Sugar	Palm Oil
1974	-	-	-	-	-	-	-	-	-
1975	14.7	3.7	2.3	2.6	6.0	3.3	2.2	-16.7	1.8
1976	1.8	2.9	0	2.5	1.9	3.2	2.1	-20.0	0
1977	1.5	4.2	3.0	1.9	1.9	3.1	-3.4	-10.0	2.0
1978	33.0	9.3	5.1	0.3	4.5	3.0	1.8	-5.6	1.0
1979	5.3	1.8	1.3	0.7	4.3	2.9	0	-11.8	-11.0
1980	25.3	3.0	-0.3	0.4	9.2	3.5	0.4	40.0	4.0
1981	13.8	1.7	1.6	-2.6	-9.9	0.4	-0.3	11.9	0
1982	11.0	2.0	3.0	4.1	-0.8	3.5	1.1	12.8	1.0
1983	-7.0	-10.4	-29.0	-30.9	-1.7	-4.5	-2.8	3.8	-2.9

Source: Computed from data obtained from: USDA, World Indices of Agricultural and Food Production, 1974-83, July, 1984.

Notes: *includes Bananas.

TABLE 13.11: *NIGERIA: COMPOUND PRODUCTION GROWTH RATE FOR SELECTED FOOD CROPS (%)*

CROPS	1974/1983
Rice Padday	10.5
Corn	1.9
Millet	-2.2
Sorghum	-3.0
Cassava	1.6
Yams	2.0
Plantains	-0.1
Sugar - raw	-1.0
Palm Oil	0.4
Milk	0.6

Source: Computed from data obtained from: USDA, World Indices of Agricultural and Food Production 1974 - 1983, July, 1984.

TABLE 13.12: *NIGERIA: CALORIE AND PROTEIN SUPPLY AND REQUIREMENTS, 1961 - 1983*

	CALORIE		PROTEIN	
Year	Supply	Supply As % of Requirement	Supply	Supply as % of Requirement
1961-65	2450	101	59.5	92
1966-70	2170	90	55.0	85
1971-75	1842	76	50.4	78
1976-80	1761	73	46.5	72
1981-83	1806	75	48.1	74

Source: Ojo, M. O. Redesigning Public Sector Strategies for Food Self-sufficiency in Nigeria, Conference Proceedings Vol. 11, Nigerian Economic Society, 1984.

One of the objectives was to supply necessary inputs to meet the growing needs of farmers. During the 1975-80 plan period, estimated Federal expenditure on the NAFPP was N13.324 million. The NAFPP which is now one of the activities under the "Green Revolution"1 programme seems to be a government directed investment with a unimodal bias since its aim was to modernize the entire food crop sector of the Nigerian economy.

In 1976, both Federal and state governments came up with an Operation Feed the Nation (OFN) campaign whose objectives included: (a) the mobilization of the country towards self-sufficiency and self-reliance in food through increased food production; (b) encouraging the section of the population that relies on buying food to grow its own food; and (c) promoting balanced nutrition and thus producing a healthy nation. Despite the several millions of naira sunk into the programme, it was another disaster. People became millionaires overnight through fertilizer distribution (see appendix for important fertilizer statistics). The OFN was merely a publicity drive warning citizens of an impending food crisis.

During the same period, Grains and Root Crops Production Companies were established by government. These companies were to be involved in large-scale farming on a joint basis with private concerns.

Another strategy being pursued by the government is that of integrated agricultural development projects (ADPs). These projects were initiated in 1975 at Gusau (Sokoto State), Funtua (Kaduna State), and Gombe (Bauchi State) and were designed to bring the cobined concepts of the OFN and the NAFPP to a defined rural population and solve on a systematic basis, the constraints of manpower and managerial requirements. An evaluation of the achievements of the strategies of the ADPs has been attempted recently by Ojo (1984).

Between 1975 and 1980, estimated total (capital and recurrent) expenditures by the government on various food programmes stood at N1.5 billion. The least amounts went to the government owned food production companies and food crop studies programme. During the 1975-80 Plan period, actual public capital

[1] *The revolution in grain production associated with the scientific discovery of new bybrid seed varieties of wheat, rice and corn whcih results in high farm yields.*

expenditure on agriculture was N1.3 billion. The Federal Government spent N12.45 million on food crops and this represented 3.09% of the total capital expenditure on agriculture. In the same period, Benue, Cross River Kaduna, Ondo and Rivers States each spent more than N1 million on food crops production (Fourth National Plan, p.8). Compared to previous years, the 1975-80 period was better in terms of government allocation to the agricultural (food inclusive) sector. The question is that to what extent did the small farmer gain from such allocations or is it the desire of government to assist small farmers or companies or rich individuals interested in farming? Intuitively, it seems that government strategies favours the rich individual and joint stock companies interested in farming. This could be dangerous for it could lead to the further impoverishment of small farmers. Recently, government announced its intention to allow foreign companies venture into farming. Allowing multinational companies and other foreign companies to feed Nigerians could have far reaching adverse implications when we consider the security of the country and the fact that food could be used as a weapon when two countries disagree on major issues. In fact, this policy is tantamount to re-colonization. Also, the folding up or selling out of government-owned food companies because profits were not realized in five years is a hasty affair. Excessive privatization of the food crop sector, especially in foreign hands is not the solution to the country's food crises. For government food policy and strategies to be effective, the rural (peasant) farmer must be seen as the centerpiece of any government policy and strategy.

It takes time for agricultural or food companies to break even partly due to the gestation period involved in the production of agricultural commodities. Government-owned food companies would eventually make profits if emphasis is on accountability and results and waste reduced to the barest minimum. The food sector should be viewed as one of the commanding heights of the economy. Hence, it should not be left to the whims and caprices of profit hungry multinationals.

Similar government strategies continued into the middle 1980s except that for the first time, local governments became involved in the food production equation. In the 1981-85 Plan

period, fifteen local governments were to spend N7.38 million in boosting food production and this amounted to almost 3% of the total expenditure on crops.

PERFORMANCE ON GOVERNMENT PROJECTS UNDER THE GREEN REVOLUTION PROGRAMME: SUMMARY OF AVAILABLE RESULTS:

The Green Revolution Programme launched in 1980 aimed at making Nigeria self-sufficient in staple foods by 1985 and an exporter of crops by 1987. (For a detailed discussion on the Green Revolution Programme see: Idachaba, 1980 and 1984).

Let us attempt to utilize the framework developed earlier in this paper in summarizing results of two government projects under the Green Revolution Programme. It is a generally held view among Nigerian economists and other social scientists interested in Nigeria's development that government agricultural projects have always failed and hence, government should disengage itself from participating in large-scale agricultural production.

> "As a matter of deliberate policy, government must disengage itself from involvement in direct farming. Large government farms will neither pay their way nor yield the expected returns in terms of cheap and abundant supply of food and raw materials. I doubt if large-scale farms have been a resounding success anywhere in Nigeria. The reason is not far to seek. Government institutions and organizations are not designed to manage commercial ventures which require close personal attention". (Oluwasanmi, 1980, p.11)

While the government has been involved directly or indirectly in projects involving export or cash crops, government projects dealing with food production are quite recent. The two projects dealing with the food crop sector are:

(a) the National Programme to boost rice production and

(b) the National Programme to boost maize, cassava, guinea-corn and millet production. The Rice Production Programme is important in order to lessen or erase the economy's dependence on rice imports. By 1978 rice imports were valued at almost N250 million and by 1983 rice imports from the USA only stood at $227 million. Increases in per capita income has made rice consumption a significant part of the average citizen's diet. Hitherto, rice was considered a "luxury" food.

The National Programme to stimulate maize, cassava, guinea-corn and millet production is also significant. Maize, in which Nigeria used to be self-sufficient, has become a component of food imports. Available evidence points to the fact that the production of cassava, guinea-corn and millet has not shown any meaningful increases in recent years.

NATIONAL RICE PRODUCTION PROJECT:

The National Council on the Green Revolution approved this project on March 3rd, 1981. The project which is under the Federal Department of Agriculture consists of assistance for land clearing to selected rice farmers groups, provision of production inputs and processing equipment to the groups, training of rice farmers, production techniques and the supply of seed requirements to rice farmers in general. In 1983, there were 475 farmers groups involved in the project and according to government officials the groups are monitored periodically for effectiveness. At the end of 1982, 195 extension workers had been trained in production, 449 tractor operators were trained as well as 22 rice processing engineers. The government allocated N51.6 million to the programme and by the end of 1981 more than 50% of the allocation had been spent on farm machinery, irrigation, pumps, sprayers, etc. Table 13 below summarizes the expenditure on the project as of December, 1981. N21.422 million was spent on farm production inputs which included rice transplanters, disc ridgers, hand-carried motorized harvesters, dryers, etc.

TABLE 13.13: ***NIGERIA: EXPENDITURE UNDER THE NATIONAL RICE PRODUCTION PROJECT, 1981 (N million)***

		x million
1	Land clearing	3.827
2	Seed production and distribution	.800
3	Training of tractor operators and mechanics	.686
4	Monitoring the programme in FDA Field Officer	.703
5	Purchase of chemicals, equipment etc.	.642
6	Payment for tractors	1.911
7	Purchase of on-farm production inputs	21.432
8	Purchase of rice processing equipment (Parboiler, dryer, mills, etc)	5.275
	Total	**N35.276**

Source: Federal Ministry of Agriculture, Lagos.

Achievements: It is very difficult to appraise the performance of a project without adequate data and information. In 1981, by our estimates, N4700 per hectare was spent on the 7,500 reasonable data are available. However, looking at hectares cultivated and estimated output, we could say that a substantial percentage of the target for land clearing was met. The projected output per hectare is 1349 kg and it seems comparable to rice production using applied improved practices. It is also consistent with reported production figures for rice (Ekpo, 1983, Chapter 4).

TABLE 13.14: ***NIGERIA: TOTAL AREA CULTIVATED UNDER THE NATIONAL RICE PRODUCTION PROJECT, 1981/82***

Project	Proposed Area(Ha)	Actual Area Planted (Ha)	Estimated Prod. (Metric tons)
Ayanba ADP*	500	213	462.0
Bide ADP	2,000	472	4,439.7
Gusau ADP	3,000	40	80.0
Lafia ADP	3,000	522	522.0
Ilorin ADP	-	100	N/A
Anambra/Imo	4,708	4,135	12,405.0
Totals	13,208	7,500	17,818.7

Source: Federal Ministry of National Planning, Lagos.
Notes: *ADP - Agricultural Development Project.
N/A - Not Available.

From Table 13.14, the six projects involved in the programme cultivated 7,500 hectares out of a total planned hectares

of 13,708 - almost 55%. The production from these hectares was estimated at 17,818.7 metric tons. The value of rice produced in 1981 at N400 per ton paddy stood at N7.14 million. The shortfall in area cultivated was attributed to several factors: (a) late arrival of equipment and machinery; (b) shortage of planting materials; (c) shortage of funds and (d) unfavourable weather conditions. Examining Tables 13.13 and 13.14, N2673 was spent per hectare and this amount appears high enough to warrant the national rice project to be seen as a high cost agricultural project. Nevertheless, the project is intended to spread to all areas of the country especially those areas where rice production under normal conditions would have been impossible. The programme seems to be a GDI project with a bimodal bias.

National Maize, Cassava, Guinea-Corn and Millet Project:

The main objective of this programme was to accelerate the rate of increase in the production of maize, cassava, guinea-corn and millet. The yearly recurrent cost of the programme was major parts: (a) a general support for all farmers, that is, small, medium and large scale farmers through the supply of improved seeds, fertilizers, cassava cuttings, etc. (b) an extensive production assistance scheme for selected groups of farmers throughout the country.

The programme assisted each group of farmers in the clearing of 20 hectares of land, provided them with farm machinery and other inputs to produce and process maize, cassava, guinea-corn and millet in various conditions depending on the ecological conditions and normal farm practice. Within a year, the National seed service distributed to states 1,520 tons of maize, 200 tons of guinea-corn and 1200 tons of millet seeds while 235 hectares of improved cassava varieties were planted in 1980/81. About 275 extension workers were trained (it is necessary to increase the number and their competence should be strengthened continuously through various refresher courses). In terms of output, in 1980/81, 14,737 tons of garri, 10,100 tons of maize, 5,000 tons of guinea-corn and 3,750 tons of millet were produced by the special group farmers.

Table 13.15 below highlights estimated production for 1982. The estimated production for cassava, maize and millet exceeds both the reported and derived figures for 1979 (Ekpo, 1983). Also, more

hectarage of land was expected to be brought under cultivation. Total hectares involving all crops was 11,340 and approximately N.67 million was spent per hectare under the programme.

TABLE 13.15: ***NIGERIA: ESTIMATED PRODUCTION OF CASSAVA, MAIZE, GUINEA-CORN AND MILLET, 1982 (Metric tons)***

Crop	Estimated 1982 Production	Target Production	Hectares
Cassava	1,714,920	1,886,445	2,300
Maize	1,410,997	1,506,890	4,040
Guinea-corn	2,885,649	3,081,760	2,500
Millet	2,625,725	2,804,175	2,500

Source: Ministry of National Planning, Lagos.

Estimated production for 1982 was still below the target production and even the target was not much of an increase when compared to previous years. In terms of our framework of analysis, this programme was an Extension type investment with a unimodal bias.

PROJECTING FOOD DEMAND GROWTH:

The inability of domestic food production to keep pace with increases in demand for food could adversely affect economic development. Elsewhere, we have shown that during the period 1969 to 1980 domestic food production lagged behind increases in demand for food and the economy had to rely on food imports (Ekpo, 1985, pp. 5-18).

The demand for food could be 'predicted' using the following model*:

$$D^* = P^* + ey\ Y^*$$

Where: D^* = the rate of growth of food demand,
P^* = the rate of growth of population,
ey = the income elasticity of demand for food, and
Y^* = the appropriate measure of income per capita.

The projection of food demand growth under different assumptions of population growth rates, income elasticity of demand of .5 and .7 for 1985-1990 is presented in Table 16 below:

*For a rigorous derivation and application of the model, (See Ekpo,

1984 (b))

TABLE 13.16: *NIGERIA: ESTIMATED INCREASES IN DEMAND FOR FOOD (in %)*

P*=2.5; ey =.5	P* = 3.2, ey =.7	P* = 2.5, ey=.7	P*=3.2,ey=.7
Y 5.3	6.0	6.4	7.1
Y1 4.9	5.6	5.8	6.5
Y2 5.0	5.7	6.0	6.7

Notes: (1) Computed from: D* = f(P*, Y*)
See text for explanation

(2) Y = GNP per capita
Y1 = Gross National Tradeable product (GNTP1) per capita
Y2 = Gross National Trade Product (GNTP2) per capita

(3) For different measures of National product: See Ekpo, Akpan 1984(a) On The Appropriate Measure of National Product: A Note Mimeo, Econs, Dept. University of Calabar, Calabar.

The future increases in demand for food is based on the assumptions that appropriate national income will grow as in the 1974-78 period. If the growth rates are less, then the estimated increases will even be higher than what obtains in Table 16.

Based on our projections, domestic food production must grow by at least 5% for the economy to be adequate in food production, - a very conservative prediction. The high projection is that domestic food production should grow by 7.1% in the next years. If a 7.1% growth is realized, then the economy could be self-sufficient in food production as the surplus could be exported. In the section that follows, we will present suggestions that could assist in bringing about food security in the country.

CONCLUSION AND RECOMMENDATIONS:

The paper examined, among other things, government food production policy and strategies and inferred that the economy's food crisis began in 1975. We also projected that domestic food

production must grow between 5 and 7 per cent and there were 1,706 modern farm holding in Nigeria. Out of this, 67% were owned by individuals working alone; 11% were of partnership ownership; 11% were owned by government while 6% belonged to co-operatives. Limited liability companies had 0.2%. There is need to encourage co-operative ownership of farms as this will go a long way in increasing productivity and partly resolve the problem of land fragmentation. In fact, resolving the right to land could go a long way in increasing food production. The land use Decree seems to have lost its bite as rural dwellers are completely by action and otherwise 'opposed' to it.

Food production strategies and programmes must be based on regional specialization and need. This also is a function of soil requirements and climatic conditions. For example, what is the rationale for having a Basin Authority in each state? Production strategies and programmes must consider economic reasons as fundamental. More often political considerations have been over-emphasized.

There is need for a progressive modernization of the entire agricultural sector so that the incomes of all farmers in the country will increase (a unimodal strategy). This calls for an extension of the plan period from five to ten or more years. This will allow for proper evaluation of the performance of food strategies and programmes especially as food products have waiting periods.

It is the responsibilities of government owned research units, Universities, etc. to ensure that research results or improved yields get to farmers. Available evidence indicates that the slight increases in some crops were due to the cultivation of more land area. The use of applied improved practices and of research stations will increase domestic food production. Though data collection in Nigeria has shown a general improvement, it is particularly important to improve data collection and compilation for food crops. It is now time to quantify the contribution of the food crop sector to the nations output.

Government-owned food companies or food companies in which government has a substantial share must be made to keep

[1] *Obtained from a survey of modern holdings of Agriculture 1981/82 carried out by the Federal Office of statistics, Agricultural survey Unit, Lagos, 1983.*

proper records so that their performance could be examined on a periodic basis. Here also, emphasis should be on accountability and results. Evaluation is a continuing and important component of the efforts to improve programmes of food development. For any government or national food policy to yield desired results the peasant (small) farmer must be the center-piece of such a policy.

APPENDIX

Let:

$$Ed_t = N_t + G_t \quad . \quad . \quad (1)$$

Where:

Ed_t = Observed excess demand in period t

N_t = Net food imports in period t

G_t = Observed price gap in period t to be closed by demand elasticity,

$$N_t = D_t - F_t \text{ or } N_t = F_m - F_x \quad . \quad (2)$$

$$G_t = Dt - F_t - N_t \quad . \quad . \quad (3)$$

Where:

D_t = Demand for food in period t

F_t = Food production in period t

F_m = Food imports

F_x = Food Exports

$$S_t = F_t + N_t \quad . \quad . \quad (4)$$

Where:

S_t = Food supply in period t

From equation (1) to (3)

$$Edt1 = D_t - F_t$$

Where: F_t = Observed or ex-post food production in period t

From equation (1) to (3), the following could be deduced:

(1) When $N_t > 0$, food is imported implying the loss of food "self-sufficiency".

(2) When $N_t < 0$, food is exported meaning food "self-sufficiency."

The loss of food "self-sufficiency" is viewed as food dependency. Most of the tables used in the paper were derived from the above framework.

TABLE 1: ***NIGERIA: IMPORTS OF FERTILIZER, 1970-1979***

Year	Fertilizer Value (x)	Fertilizer Annual Growth (%)	Insecticide Value (x)	Insecticide Annual Growth (%)	Fungicide Value (x)	Fungicide Annual Growth (%)
1970	1208.68	-	4298.7	-	1027.06	-
1971	18589.93	54	5417.99	26	820	-20
1972	3607.73	94	4265.26	-21	1287.21	57
1973	1722.27	-52	4452.34	4	169.839	-86.8
1974	N.A	N.A	N.A	N.A	N.A	N.A
1975	12264.56	-	13380.31	-	2401.08	-
1976	20393.76	66	15913.18	19	940.05	60.8
1977	13422.25	16	16270.6	2.2	1153.48	22.7
1978	5658.43	-58	28681.19	76.3	1482.89	28.6
1979	31295.91	453	2474.12	13.7	1577.49	6.4

Source: Idachaba, S. "self-reliance As a Strategy for Nigerian Agriculture: Cornucopia or Pandora's Box?" In self-reliant Strategies for National Development, Nigerian Economic Society, 1984.

TABLE 2: ***NIGERIA: DEMURRAGE CLAIMS FOR OVERSEA SUPPLIERS OF NIGERIA'S FERTILIZER IMPORTS, 1976-81***

Year	Total Demurrage Claims (x)	Demurrage Per Tonne of Fertilizer Import(x)
1976	3,216,832	15.54
1977	2,273,195	7.63
1978	1,989,624	8.48
1979	1,209,720	3.07
1980	1,136,019	2.10
1981	1,813,664	1.78

Source: As in Table B1

TABLE 3: ***NIGERIA: YIELDS OF MAJOR FOOD CROPS AS PROPORTION OF POTENTIAL YIELDS (%)***

Year	Cassava	Yams	Maize	Millet	Sorghum	Rice
1961-65	29	27	21	34	46	44
1966-70	31	22	20	34	37	50
1971-75	30	24	20	45	40	57
1976-80	24	31	27	46	40	62
1981-83	27	32	29	47	41	65

Source: Ojo, M. O. "Redesigning Public Sector Strategies For Food Self-Sufficiency in Nigeria" in Self-Reliant strategies for National Development, Nigerian Economic Society, 1984.