ECONOMIC PROBLEMS OF WHEAT PRODUCTION IN NIGERIA

BY

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D E C L A R A T I O N

I, RISLANUDEEN MUHAMMAD, declare that to the best of my knowledge, the data contained in this thesis are from original research and the Thesis has not been submitted to any other University for examination. All references in this work have also been duly acknowledged.

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C E R T I F I C A T I O N

The Thesis entitled "Economic Problems of Wheat Production in Nigeria" by MUHAMMAD, Rislanudeen meets the regulations governing the award of the degree of master of Science (Economics) of Ahmadu Bello University and is approved for its contribution to knowledge and literary presentation.

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D E D I C A T I O N

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A B S T R A C T

Wheat (Alkama) production which dates back to centuries in the Nigerian Sudanic belt was, before the construction of large-scale irrigation dams in the 1970s, on a modest scale. Large-scale wheat production is however built around a lot of controversy. Even though the government objective of attaining wheat self-sufficiency to close the huge import gap is fully recognised, the point is how to exploit the package of macroeconomic incentives under the SAP geared towards agricultural expansion. But previous studies and experiences made us to begin to question the viability of large-scale wheat production in Nigeria.

The general objective of this study therefore is to investigate as a case study of Kano state, whether the package of macroeconomic incentives provided under the SAP can be fully utilized or have indeed been fully utilised for the purpose of large-scale wheat production under the Accelerated Wheat Production Programme (AWPP), with the specific target of attaining self-sufficiency.

It is important however to note that, past government policies aimed at large-scale wheat production have been characterised with failure. The thesis provides an analysis as to how local wheat production was unable to meet the huqe import level like that of the late 1970s and early 1980s and that a positive domestic resource cost implies comparative disadvantage. The huge cost of wheat production is more than that of importation. The general recommendation towards improving the growth potential of wheat in Nigeria is provided at the end of the study.

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CHAPTER ONE

1. Introduction

The need for the articulation of the structural adjustment programme (SAP) in Nigeria and in most other developing countries, arose as a result of increasing mis-alignment between domestic demand and supply, worsening terms of trade, huge budget deficit, growing inflationary pressure and balance of payment problems. In effect, SAP has become fashionable for developing economies that have found themselves in deep recession of the 1980s.

Prior to the articulation of SAP in most developing countries, trade and exchange rate policies had a negative impact on the agricultural sector, most starkly reflected in Nigeria in the huge import boom of the 1970s, at the expense of domestic production.

Public sector involvement in economic activities has been characterised by corruption and inefficient allocation of resources. In the agricultural sector, examples are cited of inefficient public monopoly marketing and agricultural input distribution agencies, as cause of rising cost of marketing and untimely provision of inputs where needed.

Food imports have been criticised earlier for constituting a serious drain on the nation's foreign exchange. In 1976 for example, Nigeria imported 730,000 tonnes of wheat at the cost of ₦97 million in foreign exchange (AERLS 1979:4).

The SAP seeks to attack some of the basic economic problems like excessive dependence on single commodity (oil), chronic balance of payment deficits, low productivity, stagflation and so on, through encouraging private trade

and increasing competitiveness of markets.

In particular, the major role of SAP under the agricultural sector is to alter the hitherto negative trade and exchange rate policies, thereby creating conducive atmosphere for boosting local production and for export, thereby diversifying foreign exchange earnings.

Through a package of macroeconomic policy measures, the SAP aims at boosting wheat production to the level of self-sufficiency. With the ban on imported wheat, this meant that the flour mills and other allied industries will have to integrate backwards for their raw materials.

The major policy package that seeks to encourage large scale wheat production are the ban on imported wheat and the adoption of flexible exchange rate system aimed at gradual devaluation of the naira, through foreign exchange market. These were supposed to create excess demand, thereby providing a stimulus for local production.

The adjustment programme therefore is supposed to align our consumption and production patterns thereby generating self sustained growth, as President Babangida said in his 1986 broadcast, signalling the beginning of SAP.

> "our structural adjustment involves new uses of wealth new property relations, new products and production processes, new attitudes to work, new consumption habits and new interaction with the rest of the world. It seeks to harmonise what we consume with what we produce, using our own domestic endowment

of human and material resources" (Babangida, 1987:247).

It is against this background that the Accelerated Wheat Production Programme (AWPP) was launched in some states of Northern Nigeria with the specific target of 'harmonising what we consume with what we produce', by exploiting some of the basic macroeconomic incentives provided under the SAP.

1.1 Statement of Problem

Nigeria, like many other Third world countries, is faced with the problem of agricultural stagnation. From being a net exporter of agricultural raw materials in the 1960s, Nigeria became a huge net importer of food as from 1970s. Wheat and rice formed the core of food imports. Nigerian wheat import grew from less than 300,000 metric tonnes (mt.) in 1970 to 1.37 million mt. in 1982 as the following table shows:

Table 1.1 Imports of Wheat and Flour

Year	Total Wheat Equivalent (a)		
	Annual '000 Metric Tonnes	5-year Average Index 1960-64 = 100	Percentage as Flour
1934-38	3.6		100
1948-52	15.7		100
1955	40.8		100
1956	49.0		100
1957	62.8		100
1958	57.2	66	100
1959	71.0		100
1960	85.6		100
1961	86.3		76
1962	108.4		8
1963	52.8	100	8
1964	38.9		4
1965	56.5		3
1966	181.9		2
1967	123.8		1
1968	106.5	178	9
1969	192.2		3
1970	267.1		13
1971	410.7		6
1972	316.9		5
1973	454.7	405	2
1974	325.4		0.1
1975	407.6		0.3
1976	735.5		7
1977	769.7		36
1978	1,363.3	241	7
1979	1,338.9		9
1980	1,176.4		14
1981	1,516.7	1823[b]	6
1982	1,375.0		N.A
1983	870.3		N.A.
1984	1,070.9		N.A.
1985	1,678.7		N.A.
1986	951.6		

Sources: Andrae and Beckman 1985:17 (1934-82)
Akinyosoye, 1990:2 (1983-86)

Notes a) Wheat equivalent of flour obtained by applying a conversion ratio of 1:72 (according to FAO standards).

b) 3-year average

N.A. Not available.

The tilting of price relations in favour of the non-agricultural sectors through overvaluation of the naira as from the 1970s, and the heavy monestisation of the oil surplus made food importation cheap relative to local production. Apart from the entrenchment of food import dependency, the oil surplus also led to huge state expenditure on large-scale irrigation projects, notably the Kano river, Bakolori and South Chad. Designed to serve as a means towards import substitution in wheat and rice, state policies that were hitherto biased against the agricultural sector, have made those schemes inefficient, low yielding and costly.

Although there has been massive state expenditure into the agricultural sector like the setting up of the River Basin Development Authorities in 1975 and massive investment in irrigated agriculture, subsidisation of fertiliser input etc, but the pursuit of policies like the overvaluation of local currency coupled with massive importation of food, led to the neglect of domestic food production and hence, rural-urban migration; Nigerian agriculture lost about 5.44 million of its workforce between 1970 and 1982 (Dike, 1989:22).

Table 1.2 below shows the trend in huge importation of food and other consumer items as from 1976. We should note that, food import as a percentage of total imports (consumer goods and capital goods) rose from 9.5 percent in 1975 to 21.6 percent in 1983. Due to the SAP policy which among others, banned the importation of food and other agro-industrial raw materials, the trend in food imports as a percentage of total

Table 1.2 Analysis of Imports by End-use at Current Prices

	1975		1976		1977		1978		1979		1980		1981		1982		1983		1984		1985		1986		1987		1988	
	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.	₦ m	% Dist.
1. *Consumer Goods*																												
(a) Non-durable Consumer Goods	353.7	9.5	526.7	10.3	912.6	12.8	1,004.2	12.0	1,040.1	16.9	1,142.8	13.9	1,952.2	15.5	1,794.5	17.8	1,415.4	21.6	946.4	21.1	995.2	18.0	935.4	15.7	1,710.7	10.3	2,293.4	8.4
(*i*) Food	434.8	11.7	541.7	10.5	651.0	9.2	762.4	9.1	779.0	12.6	946.1	11.5	1,340.7	10.6	905.3	9.0	1,251.9	19.1	329.4	7.4	479.5	8.7	553.8	9.2	1,541.1	9.2	3,548.9	13.0
(*ii*) Other Non-durable Consumer Goods	191.3	5.2	282.0	5.5	421.7	5.9	370.2	4.4	380.7	6.2	490.7	6.0	849.9	6.7	539.2	5.4	249.4	5.4	102.1	2.3	127.3	2.3	130.8	2.3	499.7	3.0	1,064.9	3.9
(*b*) Durable Consumer Goods	..	..	979.8	26.4	1,350.4	26.3	1,985.3	27.9	2,136.8	25.5	2,199.8	35.7	2,579.6	31.4	4,122.8	32.7	3,239.0	32.2	2,916.7	44.5	1,377.9	30.8	1,602.0	29.0	1,620.0	27.2	3,751.4	22.5
TOTAL	..	..	979.8	26.4	1,350.4	26.3	1,985.3	27.9	2,136.8	25.5	2,199.8	35.7	2,579.6	31.4	4,122.8	32.7	3,239.0	32.2	2,916.7	44.5	1,377.9	30.8	1,602.0	29.0	1,620.0	27.2	3,751.4	22.5
2. *Capital Goods*	1,506.7	40.6	2,244.6	43.8	3,142.3	44.3	3,829.3	45.9	2,565.6	41.6	3,216.5	39.2	5,127.6	40.7	3,959.8	39.4	2,269.2	34.6	1,659.5	37.0	1,973.1	35.7	2,292.1	38.4	6,540.7	39.2	10,265.2	37.6
(*i*) Capital and Transport Equip.	1,003.2	27.0	1,269.0	24.8	1,671.6	23.6	2,037.0	24.4	1,234.1	20.0	2,192.6	26.8	2,751.5	21.8	2,412.7	23.9	1,377.6	18.0	1,377.1	30.7	2,843.1	33.4	1,794.3	30.0	6,021.7	36.1	9,118.5	33.4
(*ii*) Raw Materials and Fuels	220.3	6.0	261.0	5.1	297.4	4.2	350.1	4.2	169.7	2.7	215.7	2.6	590.6	4.7	452.0	4.5	192.2	2.9	66.6	1.5	109.5	1.9	261.2	4.4	374.3	2.2	1,010.4	3.7
(*iii*) Passenger Cars																												
TOTAL	..	..	2,730.2	73.6	3,775.1	73.7	5,111.3	72.1	6,216.4	74.5	3,969.4	64.3	5,624.8	68.6	8,469.8	67.2	6,824.5	67.8	3,639.0	55.5	3,103.2	69.2	3,925.7	71.0	4,347.6	72.8	12,936.7	77.5	20,394.1	74.7
GRAND TOTALS	3,710.0	100.0	5,125.5	100.0	7,096.6	100.0	8,353.2	100.0	6,169.2	100.0	8,204.4	100.0	12,592.6	100.0	10,063.5	100.0	6,555.7	100.0	4,481.1	100.0	5,527.7	100.0	5,967.6	100.0	16,688.1	100.0	27,301.1	100.0

Source: FRN, 1990: 50-1

imports therefore declined from 15.7 to 10.3 and 8.4 percent in 1986, 1987 and 1988 respectively.

The agricultural situation in Nigeria, indeed the whole of sub-Saharan African countries, has gone beyond that of growing agricultural deficits to the level of crisis of production. The general argument was that population growth, urbanisation and rising incomes (especially in urban areas) have caused local food stuffs to be more than the capacity of locally produced food since 1960 (Berry, 1984: 61).

The situation is especially true for rice and wheat where there has been a mis-match between local production and consumption. Import of food grains (wheat, rice and maize) grew at the rate of about 9 percent per year since the early 1960s, and hence further entrenching food import dependency (World Bank 1981: 48).

Sub-Saharan Africa was reported to be the only region in the World where per capita food production has been declining for 20 years at a rate of 1 percent per annum (Brandt, 1987:89). Cereals worth more than 12 million tonnes, representing 15 per cent of urban food demand, was reported to have been imported. Imports were increased by at least 1 million tonnes per year while per capita supplies have declined by about 10 percent over the past 20 years (Brandt, 1987:89).

It has been argued that if imported foodstuffs are becoming more expensive and money to buy them harder to obtain, there should be increase in their domestic production or an increase in export production so as to earn the necessary foreign exchange to finance imports (Berry, 1984: 61).

For African States, this has not been the case. African states have been designing policies that tended to be biased against the agricultural sector; the major culprits being taxing of producer prices and overvaluation of local currency. Consensual agreement is therefore firmly established on the persistence of the crisis in many African economies.

At independence in 1960, Nigeria was self-sufficient in staple foodstuffs and food production grew at the rate of 2.5 percent per year in the 1950s. By 1980 however, Nigeria was the largest food importer on the African continent, from $130 million in 1971 (8.6 percent of the total), to $1.794 billion (14.2 percent of the total)(Watts and Bassett 1985: 14).

By 1981-82, cereals import alone amounted to 2.3 million tonnes. Wheat import grew by 600 percent during the 1970-78 period as over 98 percent of wheat consumed in Nigeria was imported (Watts and Bassett 1985: 14). In 1980 alone, the Nigerian government spent ₦1.5 billion on imported cereals, which constitute 15 percent of gross calorie supply of the nation (Watts and Shenton 1984: 173).

The crisis in Nigerian agriculture became visibly manifested in thebearly 1980s, when decline in oil revenue led to the beginning of the fiscal crisis of the state. The oil revenue declined from $24 billion in 1980 to about $17.3 billion in 1981, and $11.8 billion, $9.9 billion, $11.5 billion and $12.8 billion respectively in 1982, 1983, 1984 and 1985 (Olorunfemi 1987:157).

Decline in oil revenue therefore led to decline in the nation's external reserves from ₦10,235 million in 1980 to ₦1,664 in million in 1983 as table 1.3 below shows the trend as from 1960.

Table 1.3: Nigerian External Reserves, 1960-83

Year	External Reserve (₦ million)
1960	310
1961	278
1962	242
1963	166
1964	166
1965	197
1966	184.6
1967	102.2
1968	105.4
1969	114.6
1970	130.4
1971	302.7
1972	270.6
1973	438.6
1974	3266.6
1975	3702.6
1976	3082.2
1977	2765.4
1978	1887.7
1979	5548
1980	10235
1981	3895
1982	1613
1983	1664

Source: Yahya, 1988:53

The declining trend of the nation's external reserves is not surprising as the annual inflow and outflow of foreign exchange for the period 1970-83 shows in table 1.4 below. We should however note that occasional surplus balance of foreign exchange was as a result of increase in the price of oil for those periods rather than any serious and well articulated macroeconomic policy measure.

Table 1.4: Total Annual Inflow and Outflow of Foreign Exchange Receipts: 1970-83 (N million)

Year	Inflow	Out flow	Net Difference•
1970	644.0	592.8	+51.2
1971	1,038.4	913.6	+124.8
1972	1,196.4	1,234.2	- 37.8
1973	2,236.4	1,468.3	+768.1
1974	5,312.6	2,185.5	+3,127.1
1975	5,491.3	5,517.3	- 26.0
1976	6,580.6	6,901.2	- 320.6
1977	7,742.9	8,281.1	- 538.2
1978	7,607.3	8,990.9	-1,383.6
1979	10,458.1	8,664.0	+1,794.1
1980	14,255.2	11,805.2	+2,450.0
1981	11,574.2	14,567.3	-2,993.1
1982	9,502.0	10,963.0	-1,461.0
1983	8,364.0	8,521.0	- 157.0
1984	9,263.6	8,408.8	+ 854.8
1985	11,024.1	10,463.0	+ 561.1

Sources: Usman, 1986; 179 (1970-83)
Aluko-Olokun, 1987:75 (1984-85)

Note(•) Computed from the difference between inflow and outflow of foreign exchange over the years.

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The crisis situation in Nigerian economy seriously persisted in 1982, when foreign exchange reserves declined from three months to less than three weeks worth of import level culminating in the imposition of economic emergency measures in April, of that year (World Bank 1983:71-2).

The crisis situation persisted over the years despite official state ameliorative measures. Slow overall economic growth over the last decades, stagnation and in some cases decline in agricultural production amidst growing food deficit, acute and chronic balance of payment crisis are some of the indicators of the dimension of the problem.

The continuing crisis led to the articulation of a World Bank supported structural adjustment programme (SAP) in June 1986, a month after officially announcing the ban on imported wheat. The major objectives of the SAP are as follows (FRN 1986:8):

i) To restructure and diversify the productive base of the Nigerian economy in order to reduce dependence on the oil sector and on imports;

ii) To achieve fiscal and balance of payment viability;

iii) To lay the basis for sustainable non-inflationary or minimal inflationary growth; and

iv) To lessen the dominance of unproductive investment in the public sector, improve the sector's efficiency and intensify the growth potential of the private sector.

The SAP has drastically reduced subsidies on inputs, rationalised tariffs, abolished the commodity Boards, devalued the naira and opened up the agricultural sector to foreign investment. In sum a new structure of incentives is being put in place and now institutions to boost agricultural production are being established - among which is the Accelerated Wheat Production Programme (AWPP).

The ban on imported wheat, coupled with the adoption of flexible exchange rate system and the general free market philosophy of the SAP were supposed to provide the necessary incentive to domestic wheat production.

The massive wheat consumption brought two major contradictory effects. On the one hand, wheat consumption through import has blocked the chance of development of alternative local substitute like maize, millet and sorghum, while on the other hand, the wheat milling industry had little backward linkage on Nigerian domestic agriculture, while at the same time its forward linkage extends to the grossroot urban and village economy, especially through the Bakery industry (Dike, 1989:26).

The SAP through the AWPP is supposed to provide enough backward linkage to the wheat milling industry on Nigerian domestic agriculture. In regard to agriculture, the SAP aims to (FRN, 1986:18):

i) Increase domestic food production with a view to improving nutritional standards and reducing and eventually eliminating external dependence on food supply;

ii) Increase domestic supply of agricultural raw materials, such as cotton, oil plam, sorghum, rubber, millet, sugar cane and maize thereby increasing local value added and reducing dependence on imported raw materials;

iii) Increase production of exportable cash crops thereby diversifying the export base of the economy;

iv) Raise rural employment and income; and

v) Achieve regional optimal crop production mix reflecting the comparive advantage of each agro-ecological zone.

Titilola (1987) amptly described the contraditions of Nigerian agricultural development, by pointing out that, despite past government pronouncements stressing the importance of agriculture, contrary state policies like the overvaluation of local currency, subsidisation of urban consumers and low producer prices, have tended to be biased against agriculture.

The SAP is supposed to correct these serious distortions that have hitherto dampened agricultural expansion. Part of the incentive package for local wheat growing under the SAP are the adoption of flexible exchange rate system, government withdrawal on input distribution and marketing arrangements and withdrawal of subsidised inputs.

The attempt here is to provide conducive atmosphere for the operation of free market as government earlier involvement has been criticised for inefficiency and corruption. Subsidised inputs have often ended up in the hands of some few individuals, while state appointed representatives of marketing agencies engaged in various unscrupulous activities detrimental to the welfare of the producer (Muhtar, 1984:7). Even where the inputs reach the farmer, it is often late.

The general deregulation of the economy (interest rates inclusive) were therefore supposed to create efficiency in the allocation of resources and make local wheat production profitable. The banning of wheat import is supposed to create excess demand in the short-run, thereby boosting prices and consequently local production. But conducive macroeconomic situation will be needed to achieve the said objective.

Accordingly, the major economic reform measures of the agricultural sector under the SAP are (Titilola 1987; 179-82):

i) Import cultailment or outright ban of rice maize, and wheat.

ii) Reduction of government involvement in direct agricultural production. To this extent, commodity Boards were abolished, River Basin and Rural Development Authorities were reduced from 18 to 11 with redefined responsibility (of water resources management), and winding up of government agricultural farms, companies and parastatals, and withdrawal of subsidies;

iii) The Directorate of Food, Roads and Rural Infrastructure (DFRRI) was set up to encourage farmers to stay on their farms and to facilitate evacuation of farm produce.

iv) Adoption of realistic exchange rate.

The reforms outlined above were supposed to serve as a launching pad towards boosting wheat production in Nigeria. It has been reported that proper substitute for rice, maize and vegetable oil have been found, but the issue of adequate substitute for wheat has been a subject of contentious debate between the government an the one hand, and the importers, flour millers and the bakers on the other hand (Titilola 1987:180). There is however evidence that given adequate incentives, wheat can be grown in Nigeria in a significant amount.

The goal of SAP vis-a-vis wheat production therefore is the creation of an atmosphere where consumption can be aligned with local production thereby creating greater linkages for self-sustained growth. The extent to which wheat can be grown in such a significant amount, given the huge rate of import in the early 1980s is therefore the problem of study; SAP calls for the readjustment of the agricultural sector to be independent of imports.

The AWPP is supposed to be used in this goal of domestic wheat production exploiting the already established irrigation schemes like the Kano river, Bakolori and South-Chad.

Kano State is one of the major wheat producing areas in Nigeria. The state launched its AWPP with basic aim of boosting local wheat production and attaining self-sufficiency, as one of the large-scale irrigation schemes built during the oil boom era (the Kano River Project) was cited there.

Other minor irrigation schemes were however supposed to complement the Kano river in the task of boosting local wheat production. Therefore, both in conception and technological readiness, Kano State was prepared for the large-scale wheat production programme (AWPP), as its Kano River was said to be the most 'successful' of the three major wheat schemes. This is because, unlike the other two major wheat irrigation schemes, Kano River had neither experienced natural calamities like the drying up of lake chad, nor political disaster like the peasant rebellion of Bakolori (Andrae and Beckman 1985:95). It is therefore not surprising that Kano State was the first to launch its AWPP after the import ban and the articulation of SAP.

1.2 Theoretical Framework

Throughout economic history, policy articulations have largely been based on either the neoclassical paradigm or marxian path to development. The neoclassical paradigm sees free market (spearheaded by Adam Smith and David Ricardo), as a necessary condition for efficient allocation of resources, while at the same time ensuring optimality in social welfare. The belief was that, if the market was allowed to operate without government intervention, there will be efficiency in terms of national resource allocation.

The Keynesian counter revolution of 1936 and after World War II saw the emergence of active state involvement in economic activities as a necessary condition for maximising social welfare and hence, ensuring efficiency of the private sector. By the late 1950s however, there emerged a revival of neoclassical economic theory championed by monetarists like Milton Friedman, Anna Schwartz etc, and as from the 1980s most starkly by the World Bank (post-McNamara era). The World Bank support recovery programmes such as SAP, have market forces as the core of the adjustment programme.

The major justification expounded by developing countries for intervention in economic activities can be seen in some of the theories in development economics that sees government intervention in economic activities as a necessary condition for ensuring self-sufficiency. The unequal exchange and unequal development thesis (Emmanuel, 1972; Baran, 1973; Amin, 1982), posit a situation of unequal development between the centre and the periphery due to the unequal and biased terms of trade that tends to favour the former.

The major argument was that the nature of international division of labour which ascribed to third world countries the comparative advantage of producing agricultural raw materials for export in exchange for finished and semi-finished industrial goods etc, was fashioned in a manner that will perpetuate the under-development of these countries through their continued dependence on the developed capitalist countries. The crux of dependency theory therefore is self-sufficiency and the attainment of even and mutually beneficial trade between the developed and developing countries.

The self-sufficiency thesis is the major reason provided by the Nigerian government for embarking on the programme of large-scale wheat cultivation under the AWPP. The programme was seen as a necessary step towards halting the incidences of draining the nation's scarce foreign exchange on imports, and hence, becoming free from foreign dependence on food and agro-industrial raw materials.

Wheat importation was initially made cheap because of the twin policies of naira overvaluation and foreign exchange availability to finance the imports. As a first step, the import ban and the macroeconomic reform measures under the SAP have indeed altered the situation, by providing necessary conditions for large-scale wheat cultivation.

The theoretical justification for embarking on market-guided adjustment on the agricultural sector is the fact that previous state policies that were characterised by biases against the sector were mainly caused by distortions and market imperfections in the economy coupled with deliberate government policy that was geared towards perpetuating imports and hence discouraging domestic production.

State intervention in agricultural sector over the years have been characterised with policies that tend to serve as a disincentive to domestic production through some of the following policies (Titilola, 1987: 178-79):

i) The imposition of taxes on agricultural exports through commodity Boards;

ii) Paying producer prices that were less than the World or border prices, while at the same time

spending scarce foreign exchange on imports;

iii) Nominal producer prices were being raised as the macroeconomic and exchange rate policies were pursued to lower real producer prices; and

iv) Subsidising urban consumers through imports thereby leaving rural dwellers worse off.

The major theoretical base of appraising the wheat programme under the AWPP in Kano State therefore is through the social cost benefit analysis, due to the fact that the programme's objectives (self-sufficiency) is primarily national (i.e. social), even though private accumulation is implicitly at the core of the success or failure of the programme.

Wheat production is therefore aimed at being enhanced through market-guided policy measures as demand structures, exchange rates and market-determined price level etc. The Domestic Resource Cost criterion is also used so as to establish the comparative advantage or otherwise of large-scale wheat production locally.

1.3 Statement of Objectives

In view of the problems of domestic wheat production, indeed domestic agricultural production, the import ban, and the policy articulations of SAP are supposed to have an important impact on domestic wheat growing. Accordingly, the major objectives of this research are:-

i) To assess the dynamics of structural adjustment with particular focus on how they influence wheat production. This involves an analysis of the evolving character of incentives derived from the package of macroeconomic reforms and their effects on the capacity of wheat farmers to expand production;

ii) To assess the impact of structural adjustment on the development of rural infrastructures necessary for wheat production - access roads, irrigation systems, marketing channels, extension services, financing etc.

The central interest of the research then, is to attempt to link adjustment policy to observed changes in the system and scale of wheat production in Nigeria and to assess whether adjustment policy can succeed (or has succeeded) in closing the huge gap between Nigeria's wheat needs and current internal output capacity.

Wheat production in Nigeria under the AWPP is taken as a case study on the assumption that Kano State, being one of the major wheat producing zones, developments there can be taken as representing the general national trend. The new policy under the SAP provide new incentive/disincentive structures which are bound to influence agricultural production, wheat production inclusive.

1.4 Relevance of the Research

The AWPP holds an important position in the government's attempt at achieving self sufficiency in food production. Wheat import constitute a serious drain on Nigeria's foreign exchange. The wheat programme (AWPP) is therefore part of the structural package of altering the consumption and production patterns of Nigerians as enshrined under the SAP. At the core of this policy articulation is the realisation of a realistic exchange rate. This is expected to bolster efficiency in the market allocation of resources relating to agriculture. It is expected to boost prices and hence, local production of wheat.

This research is relevant in view of the significant relationship between the AWPP and other macroeconomic policy measures articulated under the SAP aimed at boosting food production. The result of this research will enable us ascertain whether the adjustment policy measure can succeed or has indeed succeeded in closing the huge gap of imported wheat like that of the late 1970s and early 1980s.

1.5 Major Argument of the Study and Methodology

The AWPP aims at growing wheat on a massive scale to substitute for imports. This study will work on the following arguments:

i) Local wheat growing cannot match the huge import level of the late 1970s and early 1980s and hence, incapable of satisfying domestic demand. Apart from the national constraints, Nigeria lacks the

technological wherewithal to boost wheat output to the level sufficient to meet the high consumption level of the early 1980s.

ii) The present domestic resource cost involved in wheat production under the AWPP is more than that of importation.

Accordingly, the approach to this study is basically descriptive and analytical. That is to say, we are going to study the impact of the wheat programme on the average farmer (i.e. from micro level), how the programme has altered his farming pattern, income, productivity and living standard.

This study will probe into whether large-scale domestic wheat growing is indeed a viable venture worth undertaking, i.e. whether the basic infrastructural and technological facilities necessary to make the wheat programme (under the AWPP) capable of satisfying Nigeria's domestic needs are available.

We have therefore administered a questionnaire which was filled via a random sample of farmers at Zone I of Kano Agricultural and Rural Development Authority (KNARDA). We choose to draw our sample from that zone because it incorporates the Kano river which is the largest area under wheat cultivation in Kano State, and in Nigeria as a whole presently. Hence, developments there, can be taken as representing the general trend.

We have also drawn another questionnaire which was filled by officials of the Northern Nigeria Flour Mills (NNFM), Kano. The attempt here, is to have their present view on the import ban, their production capacity over the years and see whether they have indeed adjusted to the present policy options. The view of NNFM will be taken as representing the view of other flour mills in Nigeria. The Domestic Resource Cost is also used to see whether Nigeria has comparative advantage in local wheat growing or not.

Simple statistical tools will be used in our data analysis. We shall also draw our data from other sources like the World Bank publications, Central Bank of Nigeria publications, Kano State Ministry of Agriculture and Rural Development, Hadejia Jama'are River Basin Development Authority (HJRBDA) and those derived from other scholarly works.

1.6 Background on Area of Study

Carved out of the then Northern Nigerian region, Kano State was created by virtue of Decree No. 14 of 27th May, 1967. The state covers an area of 43,000 square kilometres or 4.7 percent of Nigeria's total land area (Kano State, 1983). Based on 1986 projection, the State has the highest population of 11.25 million or 10.4 percent of the entire population of the Federation, despite covering only 4.7 percent of Nigeria's total land mass (Kano State, 1983:43)

The state is centrally located on the northern border of Nigeria, lying between latitudes $13^{o}53'$ and $10^{o}25'$ of Katsina state in the West. It is bounded by Bauchi State in the East, Borno State, Katsina State and Niger Republic in the North and Kaduna and Bauchi States in the South (See figure 1.1). The state has the largest number of local governments in the Federation (See figure 1.2).

The state lies mostly in the Sudan vegetation zone, except part of the Southern borders where Guinea vegetation predominates. The climate of Kano varies from harmattan to rainy and dry seasons. The harmattan season is subject to dry sandy winds blowing down from the Sahara. Temperature tended to fall during the period from December to end of February.

The backbone of the state's economy is agriculture, with about 75 percent of the total working population involved. Out of the state's 4.25 million hectares, 2.5 million hectares were under cultivation. About 0.085 million hectares are under water in form of lakes, swamps and dams (Tahir 1987:9).

There are two major rivers in the state, Kano and Challawa. The Kano River has an estimated annual run-off of 1,175,000 acre/ft with peak flows of about 40,000 c.f.s., while the Challawa River has an estimated annual run-off of 950,000 acre/ft with peak flows of 17,000 c.f.s. (Tahir 1987:9). Other rivers include Tomas, Gari, Gaya, Hadejia, etc. that offers great opportunity for irrigated agriculture.

FIG. 1.1 LOCATION MAP OF KANO STATE

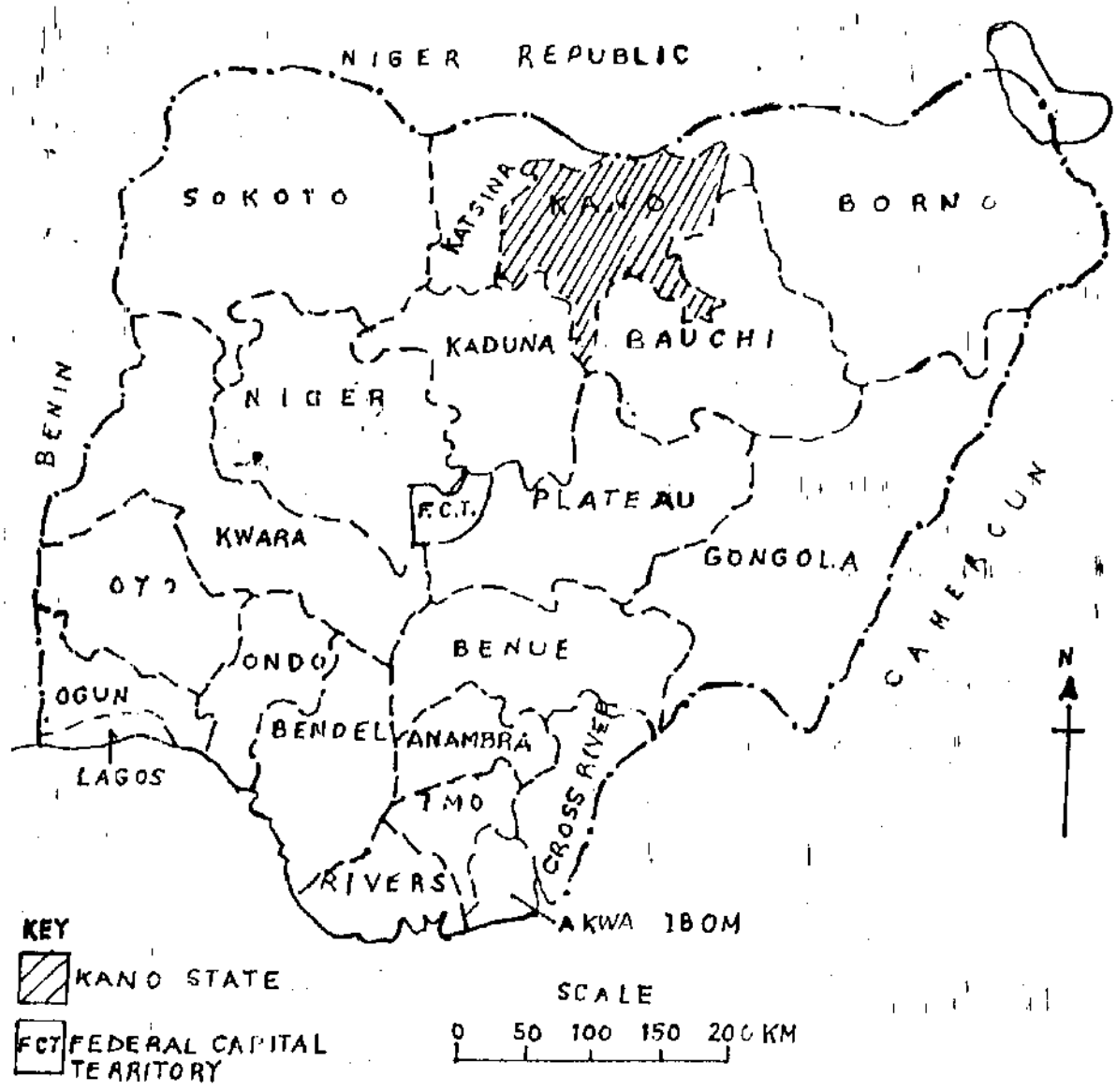
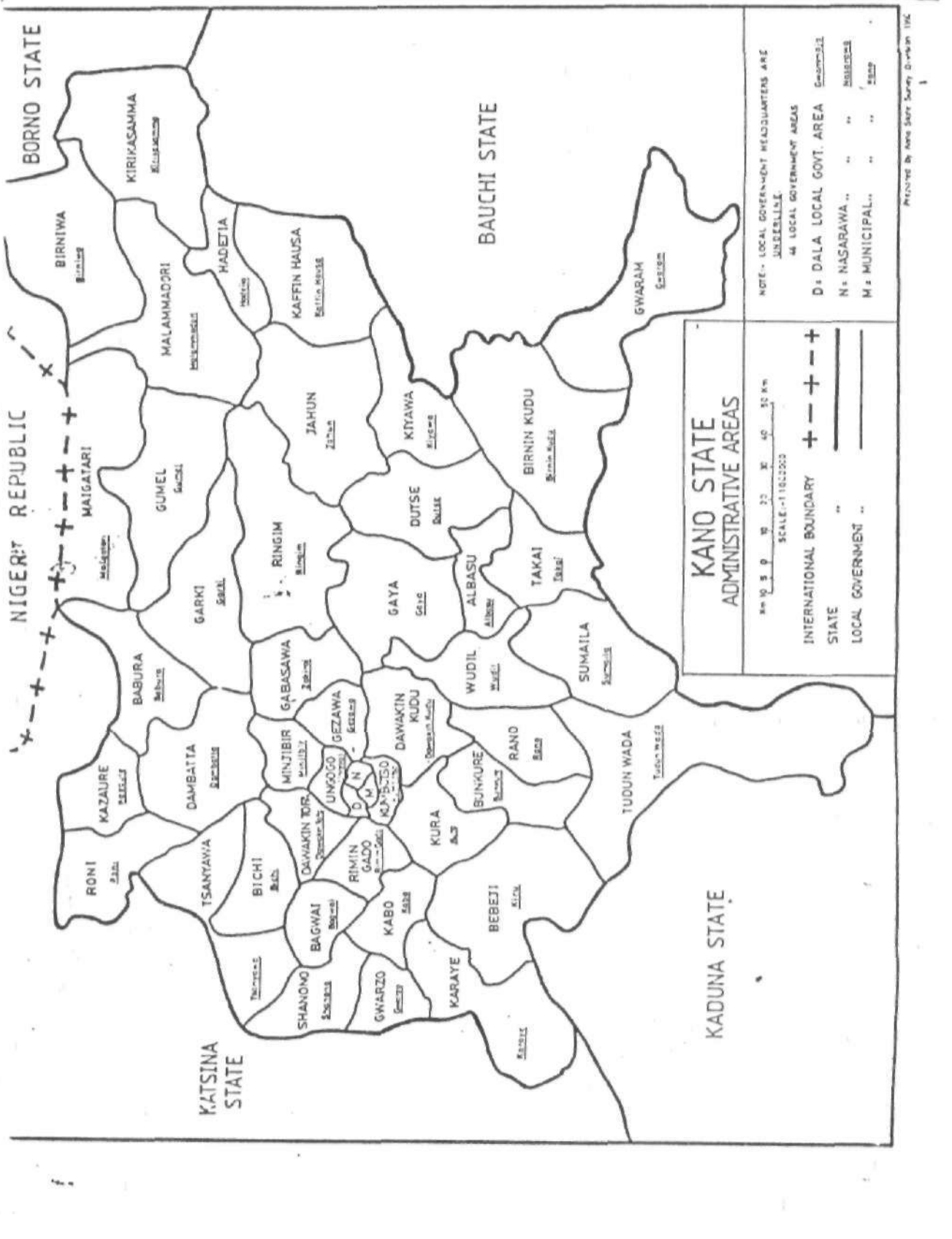


Fig. 1.2: Map of Kano State Showing 46 Local Government Areas



The Kano river project was started during second National Development Plan. It was conceived when the suitability of the dam was spelt out by United States Agency for International Development in its 1968 report on the earlier reconnaisance study of the Chad Basin (Baba, 1984: 2-3). The contract was awarded to the Dutch Consultants, Netherlands Engineering Construction (NEDECO), who had already presented a feasibility study to Kano State Government in 1970. The construction of the dam was to impound some 1,200,000 acre feet of water in a lake. An area of some 125,000 acre will be irrigated given sufficient water conservation (Tahir, 1987:137).

Most farmers depend on rain-fed farming, and the methods of farming, except in the irrigation zones were largely primitive and time consuming. Large-scale irrigation is mostly taking place at the Kano River Project. The agrarian rural economy however, exist side by side with non-agricultural activities like crafts, trade, koranic scholarship, labouring, barbering etc.

Rains mostly start around April and planting is done by mid-May. By mid-October, rains are rare, signifying the beginning of seven months of dry season. The dominant staples are millet and sorghum (guinea corn), but the increased consumption of fertiliser (high yielding varieties) meant that maize, rice and wheat are increasingly penetrating the peasant economy due to their short time maturing and the dynamics of irrigated agriculture in Nigeria.

A number of dams were built at the post-civil war oil boom era, one of which was the Tiga dam. The dam was to have a reservoir capacity of 20,000 million cubic meters capable of irrigating over 70,000 hectares of land (Andrae and Beckman, 1985:94). The dam which was financed by the Kano State Government, with the Federal government and Food and Agricultural Organisation (FAO) assistance, was targetted at large-scale irrigation of especially rice and wheat. Production of wheat on pilot basis therefore started as early as 1971, through drawing water from a smaller dam, the Bagauda dam (Andrae and Beckman, 1985:95).

Prior to the construction of the Tiga dam, peak seasonal flooding in the Kano-Hadejia River used to cover large tracts of land near Ringim and beyond Hadejia, thereby enabling 400-800 hectares of wheat to be grown on residual moisture after receding of water (AERLS, 1979:34). The fadama culture was very much part of the peasant system downstream of the Kano river prior to the dam construction.

In the area of commerce and industry, Kano has a long historical tradition that predated colonial period. It has long been a centre of trans-Saharan trade. Kano was known beyond the western Sudan for its iron smelting and metal fabrication industry, local textile weaving and tanneries, indigo dye pits and ceramic wares.

It was in Kano, that the first Nigerian textile plant was set up by leading Hausa trading community members, the Kano citizen trading company. It was also in Kano that what was believed to be the first International trade fair in sub-

Saharan Africa was organised in 1959 to commemorate the 1,000th year of the existence of Kano (KACCIMA, 1989:18). Presently, it is one of the fastest growing industrial centres that is second only to Lagos.

1.7 Scope and Limitation

This research, like similar other research works, will be faced with some limitations, that are bound to have an impact on the nature and scope of the study. Firstly, the research is aimed at taking a case study of Kano State's wheat programme (AWPP). The attempt here is to assume that the developments discovered there can be seen as representing the generalised national trend, which may not necessarily be so.

Secondly, inadequacy of data necessary for undertaking this research is another problem, most importantly the hostile attitude of people towards filling questionnaire. People tend to believe that the information obtained from the questionnaire might not be used in their favour, like in computing taxes etc. This will certainly limit the quality of the analysis.

1.8 Organisation of the Study

This research essentially consist of five chapters, with the present one discussing the general introduction on the crisis in Nigerian agriculture, indeed sub-saharan African agriculture and subsequent adjustment measures, theoretical

framework, statement of objectives of the study, relevance of the research, major argument of the study and methodology, area of study, scope and limitation etc.

Chapter 2 reviews the literature on history of wheat production in Nigeria. The trend in massive entrenchment of wheat consumption through huge importation is also reviewed.

Chapter 3 attempts to provide a background to the AWPP; the crisis in the agricultural sector that led to the articulation of macroeconomic reform measures under the SAP, among which is the present AWPP.

Chapter 4 basically discusses the economic problems associated with local wheat growing, both natural and structural and see whether the SAP policies have solved them or can indeed solve them by producing the equivalent of the import level of the late 1970s and early 1980s and reducing the cost of production to a level lower than that of imports.

Chapter 5 being the final chapter of the study, provides summary of the research findings and recommendations.

1.9 Bibliography

(ASRLS) (1979) Agricultural Extension and Research Liaison Services, Ahmadu Bello University, Report on Wheat Production and Marketing in Nigeria, Zaria.

Aluko-Olokun, I. (1987). 'An Appraisal of the Second-Tier Foreign Exchange Market (SFEM)'. Philips, A.O. and Ndekwu E.C. (eds). Structural Adjustment Programme in a Developing Economy: The case of Nigeria, Ibadan: NISER.

Amin, S. (1982). 'Under development and Dependence in Black Africa - Origins and Contemporary Forms'. Cohen, D.L. and Daniel, J. (eds). Political Economy of Africa: Selected Readings, Longman Group Limited

Andrae G. and Beckman, B. (1985). The Wheat Trap: Bread and Under development in Nigeria. London: Zed Books.

Baba, J.M. (1984). 'Developing Rural Nigeria through Capital Intensive Irrigation Projects: A critique'. Journal of Issues in Development Vol.1 No. 1 June.

Babangida I.B. (1987). 'Address to the Nation on various National Issues'. Philips, A.O. and Ndekwu, E.C. (eds) Structural Adjustment Programme in a Developing Economy: The Case of Nigeria. Ibadan: NISER.

Baran, P. (1973). The Political Economy of Growth'. Penguin Books, Ltd.

Berry, S.S. (1984). 'The Food Crisis and Agrarian Change in Africa: A review essay'. African Studies Review, Vol. 27 No. 2 June.

Brandt, H. (1987). 'The Food Crisis in Africa: A Discussion of the Proposals for Remedying it'. Economics Vol. 36

Dike, E. (1989). "Processes and Trends in Agricultural Decline and Crisis in Nigeria, 1960-85". Economics Department, Ahmadu Bello University, Zaria (Mimeo).

Emmanuel, A. (1972). Unequal Exchange, Monthly Review Press New York.

(FRN)(1986). Federal Republic of Nigeria, (Structural Adjustment Programme for Nigeria (July 1986 - June 1988). Federal Government Printer, Lagos.

___ (1990) _____ Assessment and Evaluation of the Structural Adjustment Programme (SAP). Federal Ministry of Budget and Planning, Lagos.

KACCIMA (1989). Kano Chamber of Commerce, Industry, Mines and Agriculture. 10th Kano Made-in-Nigeria Trade Fair (1989 brochure).

Kano State Statistical Yearbook, (1983). Statistics Unit, Economic Planning Division, Ministry of Finance and Economic Planning, Kano.

Muhtar, M. (1984). "Crisis and Adjustment in the Agricultural Sector(with some preliminary notes on Nigerian Case Study)" Faculty of Economics and Politics, Cambridge University, (Mimeo).

Olorunfemi, M.A. (1987). 'Oil Sector and its contributions to the Structural Adjustment Programme'. Philips, A.O. and Ndekwu, E.C. (eds.) Structural Adjustment Programme in a Developing Economy: The Case of Nigeria. Ibadan; Nigerian Institute of Social and Economic Research.

Tahir, M.M. (1987). "Implementation of Kano State Development Plans, 1970-1985". Unpublished M.Sc Thesis, Ecdnomics Department, University of Ibadan.

The World Bank (1981). Accelerated Development in Sub-Saharan Africa: An agenda for Action: Washington D.C.

_____ (1983). Annual Reports, Washington D.C.

Titilola, S.O. (1987). 'The Impact of the Structural Adjustment Programme on Agriculture and Rural Economy of Nigeria'. Philips, A.O. and Ndekwu, E.C. (eds). Structural Adjustment Programme in a Developing Economy: The Case of Nigeria. Ibadan; Nigerian Institute of Social and Economic Research.

Usman, Y.B. (1986). Nigeria Against the I.M.F.: The Home Market Strategy Kaduna: Vanguard Printers.

Watts, M. and Shenton, R. (1984). 'State and Agrarian Transformation in Nigeria'. Barker J. (eds). The Politics of Agriculture in Tropical Africa Vol. 9 Sage publications.

Watts, M.J. and Bassett, T.J. (1985). 'Crisis and Change in African Agriculture: A comparative study of the Ivory Coast and Nigeria'. African Studies Review, Vol. 28 No. 3

Yahya, S. (1988). 'Nigeria Against the International Monetary Fund: A review of Capitalist Integration through Debt'. Kiyawa, I.A. (etal). Topics on Nigerian Economy. Occasional Papers series No. 1 Economics Department, Bayero University, Kano.

CHAPTER TWO

2. HISTORY OF WHEAT PRODUCTION IN NIGERIA

2.1 Introduction

In this chapter, we review the literature on the history of wheat production in Nigeria. We will take a look at the forces behind the large-scale wheat production programme, the import penetration of wheat and the role of the flour mills and the bakeries that contributed to the expansion of wheat consumption.

2.2 Wheat Production in Nigeria

Large-scale wheat production in Nigeria started with a great deal of controversy, a controversy that was built around a commodity that was not known in a significant amount in the peasant system so long ago. The controversy started with the construction of large-scale irrigation dams, a necessary condition for wheat production in Nigeria. The construction involved huge amounts of money whose economic justification was basically post-civil war oil boom.

Though wheat consumption was introduced on a modest scale during the colonial period, it was however, entrenched through massive imports later in the 1970s and early 1980s. But this by no means signifies that wheat production is alien to Nigeria. What is alien is the large-scale nature of the programme.

Wheat has been cultivated for centuries in Nigeria's Sudanic belt, but on a modest scale for the aristocracy and the rich. It was introduced into West Africa by the

Arabs as from the 12th century. Wheat was said to have originated from North Africa and then spread through Sudan to Lake Chad (AERLS 1979:12).

The earliest report of wheat production in Nigeria goes back to the 18th Century for Borno and the 19th century for Kano, and its cultivation was then confined to cool dry season (November-March), on the borders of small irrigated gardens and on heavy low-lands (fadama) soils with residual water' (AERLS 1979:12). The earliest colonial experience with wheat goes back to the 1920s (Andrae and Beckman 1985:80). In 1949, the then Northern Nigerian Ministry of Agriculture set up an Irrigation Division, initially concentrating on small rice schemes - the Niger valley, Sokoto and the reconstruction of Kwarre Project. As from the 1950s however, more attention was given to other areas and to wheat production, still on a very modest scale. The areas selected were Wurno on the Rima valleys, Hadejia, South-East of Kano and sites west and South of Lake Chad. The schemes pumped water from small reservoirs; by 1967-68 about 2,000 hectares were under wheat cultivation (Andrae and Beckman 1985: 80-1).

Though wheat production in Nigeria started much earlier, active research into its production did not however start until 1959. But since then, increasing research interest has been paid to it in terms of trying to identify varieties that will suit Nigerian condition. The idea was to find varieties that will be responsive to fertilisation

and resistant to diseases and to lodging. Different varieties introduced from other parts of the world were tested, one of which was at Riyom in Plateau State (Redden, 1979: 3-5). From 1962 onwards however, most of the varieties tested were of Mexican origin, which were frequently short strawed, quick maturing and responsive to fertilisation, resistance to diseases and to lodging and of good quality (Redden 1979: 3-5).

The Mexican experience of large-scale wheat production as from the 1940s, led to the huge reduction in its importation, thereby saving foreign exchange earnings. The research works mostly done by the International Centre for the improvement of maize and wheat (Centro International De Mejeramiento de Maize y Trigo, CIMMYT), was used elsewhere by India and Pakistan in 1950s and 1960s with great degree of successes in launching their Accelerated Wheat production programmes (AWPPS) (Borlaug, 1968: 12-16).

In Nigeria, a permanent wheat improvement programme formed part of the investigation work of the Institute of Agricultural Research (IAR) of the Ahmadu Bello University, Zaria, as from 1961. But the wheat programme were mostly trials at scattered government experiment centres run by IAR staff, prior to the establishment of irrigation research station at Ngala (Borno State), in 1973 (Redden 1979:17).

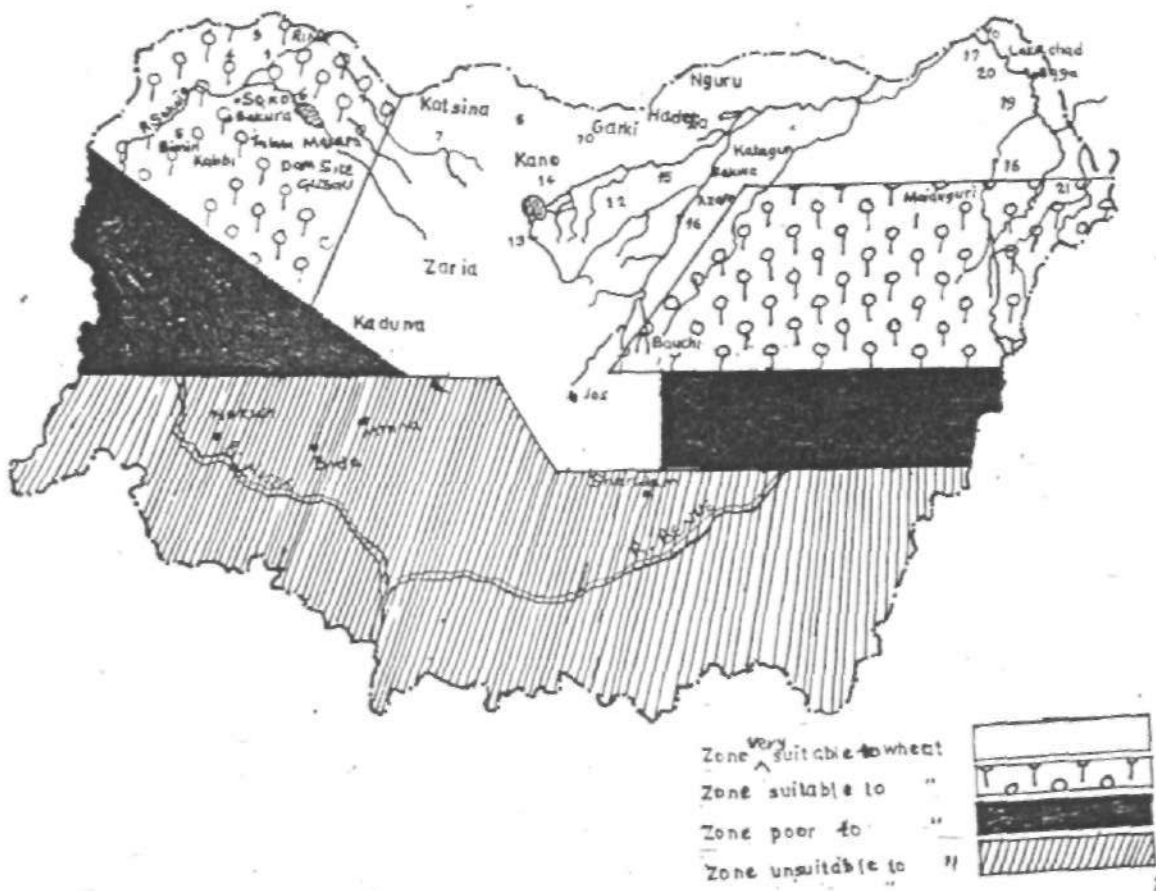
Wheat is a cold season crop. The yield of wheat depends on the temperatures, humidity and the period of cold season prevailing during the crop growth period. Temperature and

water regimes are therefore very crucial to yield determination. Wheat is therefore being grown in Nigeria almost entirely under irrigation between latitudes 10^{o} - 14^{o} and altitudes 240 - 360. Temperature therefore remains the factor inhibiting the extension of the crop production south of Nigeria (Redden 1979:3).

Wheat is being grown in Northern Nigeria under a very unpredictable climatic condition. Figure 2.1 shows the areas suitable for wheat cultivation. The area south of latitude 10^{o} where the cool season varies from a combination of maximum temperatures above $32.5^{o}C$, and a minimum temperature mostly below $15\ ^{o}C$, is not suitable to wheat growing because conditions are warm to obtain the satisfactory tillering and large spikes necessary for high wheat yields (AERLS 1979: 36).

Wheat can be grown successfully in Nigeria where the harmattan period provides the much needed low temperatures. The zones designated as suitable for wheat growing (Sokoto, Maiduguri, Bauchi) in figure 2.1 generally have an average of 20-60 days with maximum temperatures below $32.5^{0}C$ and 40-100 days, with minimum temperatures below $15^{o}C$ in November-February wheat season. Once the requirement of low maximums is partially satisfied, the occurence of low temperature is useful.

FIG 2.1 Areas Suitable to Wheat Production in Nigeria



KEY

1. Goronyo Irrigation Scheme
2. Wurno " "
3. Kaiama " "
4. Tungun Tudu " "
5. Kardi " "
6. Bakolori " "
7. Karaduwa " "
8. Gari River " "
9. Tomas River " "
10. Jakara River " "
11. Watari River " "
12. Various Minor Schemes I " "
13. Kano River I " "
14. " " II " "
15. Hadejia Basin " "
16. Jamaare " "
17. Ya MNR Bama " "
18. Scip " "
19. Kironowa Polder " "
20. Baga " "
21. Yedsiram " "

Source: Adapted From AERLS 1979 : 35

In Sokoto Zone however, the risk of high temperature in the critical 3-4 weeks before and during flowering, reduces the probability of high yields. The temperature data therefore shows that yields are most probably to be high in Kano and Borno, though Sokoto has been a long centre of wheat growing both traditionally and on irrigation (AERLS 1979:36).

Wheat grown within the November-February period with maximum temperatures below 32.5°C (70 -115 days) and minimum temperatures below 15°C (80-95 days), is expected to yield well, given good standard of irrigation management. This zone is designated as very suitable to wheat growing.

2.2.1 Large-scale Wheat Production in Nigeria

The first attempt at large-scale wheat production through massive mechanisation was perhaps undertaken in the 1970s, with the construction of huge irrigation dams. But the huge irrigations dams were not primarily based on wheat production.

The 1970s decade saw the beginning of genuine state interest in large-scale irrigated wheat production in Nigeria. The widening food production deficit and increasing demand for imported food (especially rice and wheat), necessitate the need by the state to begin a process of modernising Nigerian agriculture from a hitherto peasant based subsistence agriculture to large-scale commercial agriculture, as commercialisation of agriculture is an

inevitable and essential feature of the emergence and consolidation of capitalism.

The huge foreign exchange earnings from oil exports, coupled with the great Sahelian drought, made large-scale mechanisation and wheat production a justifiable programme. The 'Report of the Study Group on Irrigation and Drainage' prepared by the National Agricultural Development Committee (consisting mostly of irrigation engineers from state governments and universities), saw large-scale irrigation as 'the largest single factor for increasing production in Nigeria ... for the arid and semi-arid regions of the northern states, it was even more necessary if these regions were not to be condemned to subsistence agriculture forever' (Andrae and Beckman 1985: 88).

Earlier research work on the Nigerian Sudanic belt, however, provided the technical backing to the pursuit of the programme. According to a Food and Agricultural Organisation study on Agricultural Development of Nigeria (FAO, 1966), wheat production on a large-scale was seen as possible in Northern Nigeria which experiences cold months similar to the winter season of semi-temperate crops.

The FAO, however, warned against devoting too many resources to wheat as knowledge and technological means of profitable production was very limited. The possibilities of large-scale wheat production was also explored by the Commonwealth Development Corporation (CDC).

Though the CDC, based on FAO report, agreed about the viability of large-scale wheat schemes, they however posited two problems. First, to make sure that adequate study particularly of soils were made in the selection of sites, and secondly, the government should ensure adequate tariff and price policies in support of the local producer (Andrae and Beckman, 1985: 86).

The CDC therefore saw an advantage in imposing high duties on imported wheat not just from the point of view of protecting locally grown wheat, but that of also reducing bread consumption, a reduction that is supposed to be temporary until the time when large-scale local wheat production has taken place.

The second problem highlighted by CDC was also discovered in a research by Wallace (1979) on the Kano River Project, where she showed the dilemma of peasant farmer in terms of production of wheat. Wheat like in China for example, (Johnson and Beemer, 1979: 103-104), is supposed to be a cash crop for export to the city. For its production to be profitable therefore, there is need for tilting of price relations in favour of locally grown one (Wallace 1979: 108).

The combined expertise of International Agencies like the United States Agency for International Development (USAID, 1968), the FAO, and the CDC reports provided the Nigerian government with the necessary assurance on the viability of large-scale irrigation schemes, most importantly for wheat production.

Wheat, which cannot be grown in Nigeria during the rainy season due to climatic conditions, offered the solution to the question of what to produce in this large foreign exchange intensive schemes, as the decision to construct large-scale irrigation dams was already sealed politically (Andrae and Beckman, 1985: 79-80).

Record of polarity on the viability of large-scale wheat production have been well documented. While others see in the programme a solution to foreign import dependence, so that Nigeria can be untied from the hands of international capital, others see no economic rationality in either massive importation or import substitution in wheat. Still others see no harm in continued importation so long as the local economy cannot provide enough to satisfy local demand.

Kolawole (1982) posited that, the need for import substitution in rice and wheat, was derived out of the need by the government to reduce its dependence on imported foodstuffs. An opposite idea to Kolawole's was however postulated by Andrae and Beckman (1985). They built their hypothesis on the fact that, it neither pays to massively import nor is it profitable to pursue a policy on import substitution in wheat.

On the first count, they point at the huge drain on foreign exchange. Huge sums of money was expended on the importation of wheat, the major beneficiaries being the United States agriculture, importers, flour millers and the bakers. Their interests here are of course tied and interlinked.

On the second point, Andrae and Beckman saw large-scale mechanised wheat farming as alien to peasant agriculture, the dominant agricultural system in Nigeria. Hence, any large-scale farming programme will be at the expense of peasant isolation, as it will favour the well off absentee farmer, who by virtue of being a businessman or a retired or senior serving civil servant, has access to government subsidised inputs and other supportive services. This point was also highlighted by Wallace (1979; 1980), on the case of Kano River Project.

2.2.2 Cost of Domestic Wheat Production

Prior to the import ban and the articulation of SAP, the cost of Nigerian grown wheat was said to be more than the cost of imported ones (Andrae and Beckman 1985; Wallace 1979, 1980; Palmer-Jones 1980; Watts and Shenton 1984). This of course has a lot to do with the then rising oil exports and, hence, increasing foreign exchange earnings, and the overvalued naira which of course favoured imports vis-a-vis local production.

High subsidies were then required to cover even recurrent costs at the wheat schemes. The untimely provision of tractor ploughing and fertilisers, and inefficient maintenance of irrigation canals made yields low and uncertain. Rural incomes were also said not to have significantly increased.

Poverty and indebtedness force farmers to sell their produce at harvest time only to buy it at a higher price later (Hill 1972). Others, due to structural poverty, either leave their land fallow or rent it out, as they cannot meet the financial or labour demands of mechanised farming (Wallace, 1979). Local wheat production was therefore then expensive relative to the cost of importation.

Inexpensive imports and overvalued exchange rate were mostly held as culprits for discouraging production of tradeable crops, and therefore contributes towards the policy of perpetuating low producer prices at the expense of domestic peasant farming sector, thereby making domestic production unprofitable (Gsanger, 1987:63).

It was reported for example, that the estimated cost of a tonne of locally grown wheat at factory gate of any Northern and Southern Nigerian Flour Mills was ₦800 and ₦880 respectively. This however campares very unfavourably with $200 estimated price of imported wheat including all other costs incurred at the port (₦1 = $1.5 in 1982 prices). In naira terms, this meant that the price of imported wheat was ₦133 a tonne, signifying the expensive nature of domestic production (Andrae and Beckman, 1985: 125-26).

This high cost of production is added to the fact that most of the farmers were poor and therefore could not afford irrigated wheat farming. Big time farmers therefore got an opportunity of renting or buying the land and hence got better access of government subsidies, loans, extension and technology.

In the light of these, Olugbemi (1981) in support of the programme of large scale irrigated wheat schemes pointed out that 'the difficulties encountered should not deflect from the goal of self-sufficiency but rather lead to greater exertions' (Quoted from Andrae and Beckman 1985: 101). But still others described the irrigated wheat schemes as inefficient and low yielding (Beckman, 1982; Oculi, 1982).

Earlier report showed that wheat yield was unpredictable. Wheat then yielded about 1.9 tonnes per hectare instead of the 4 tonnes predicted and its sale barely covers cost of production (Wallace, 1980: 68-9). Late planting, poor seed and land preparation, poor drainage and irregular or less water supply are the major causes of the low yields. Climatic conditions, timely planting and technological advancement are therefore very crucial to wheat production.

Though wheat yield is low which added to the cost of production, but compared to other African countries, it was said to be encouraging as shown in table 2.1

Table 2.1: Wheat Yield in Selected African Countries

(Tons/Ha)

Countries	1975	1976
World	1,558	1,774
Africa	1,444	1,208
Algeria	0.88	0.957
Egypt	3.472	3,342
Ethopia	0.82	0.96
Kenya	1.505	1,342
Morrocco	0.931	1.146
South Africa	1.227	1.411
Sudan	1.085	0.880
Tunisia	0,916	0.773
Nigeria	-	1.9

Source: Tufail, 1978:5

2.2.3 Wheat Production in Nigeria: A summary

Although the total output of wheat production has been a subject of contentious debate between the government on the one hand, and the flour millers, bakers and the importers on the other hand, there is no doubt about the fact that there has been considerable increase in wheat output and total number of areas planted since the import ban became effective in January 1987.

Table 2.2 below shows the projected and actual production of wheat between 1978 to 1986, which was then mainly derived from the efforts of the River Basin Development Authorities (RBDAS).

Table 2:2: Projected and Actual Wheat Production (Tonnes) in Nigeria (1978-86)

Year	Projected Production (i)	Actual Production (ii)	(ii) as % of (i)
1978	6,500	N.A.	-
1979	8,400	4,348	51.76
1980	19,790	6,168	31.16
1981	47,978	5,832	12.15
1982	84,848	14,947	17.61
1983	130,945	4,348	3.32
1984	165,902	40,307	24.29
1985	199,850	15,600	7.8
1986	219,782	17,414	7.9
1986/87	-	50,000	-

Source: Yayock and Misari, 1990:7

Note :NA: (Not available)

Although wheat outputs were consistently lower than the projected production target over the years, production however, increased tremendously to about 600,000 tonnes in 1988/89 from a total planted area of about 215,000 hectares, which is more than ten times the 1986 production figures of 50,000 tonnes from a total area of 25,000 hectares (Yayock and Misari 1990).

Ten States of Nigeria were identified to be situated in the traditional wheat belt. These states projected available land totalling about 1,845,629 hectares in the 1988/89 wheat season, representing the total irrigable land under the RBDAS and the yet to be developed alluvial (fadama) lands. (Abraham, 1990:1).

At an estimated yield of 2.2 tonnes per hectare, wheat worth 4,060,383.8 tonnes could be produced, while Nigeria needs only 2 million tonnes per annum to be self-sufficient (Abraham 1990:2). But at the end of 1988/89 wheat season, only 11 percent of the potential land was actually cultivated as table 2.3 below shows:-

Table 2.3: Wheat Production Estimates in Nigeria (1988/89)[1].

States	Potentially Available Area (Ha)	Proposed Area for 1988/89 Cropping (Ha)	Actual Area Cultivated (Ha)	Estimated Average Yield (T/Ha)	Estimated Total Number of Tonnes Cultivated[2]
Borno	399,000	10,000	11,246	2.5	28,115
Gongola	59,129	57,000	328	2.5	820
Bauchi	150,000	5,000	4,500	2.3	10,350
Plateau	239,000	300	502	1.8	903.6
Sokoto	286,000	6,230	5,093	1.5	7,639.5
Kano	400,000	200,000	175,914	2.5	439,785
Katsina	80,500	25,000	13,400	1.5	20,100
Kaduna	200,000	10,000	2,600	2.0	5,200
Niger	100,000	-	800	2.2	1,760
Kwara	28,000	-	500	2.2	1,100
Total	1,941,629	313,530	214,883	2.1	515,773.1

Source: Abraham, 1990:8

Note: (1) Data supplied by the States at the National Wheat production meeting March 14 - 15, 1989)

(2) Computed by Multiplying Actual Area Cultivated and Estimated Average Yield.

The potential land for large-scale wheat production in Nigeria is therefore abundant. What is lacking is the technological wherewithal to boost wheat output to the import level of the early 1980s. This implies increased mechanisation, fertiliser consumption, expansion of irrigated lands and in general a massively transformed farming system.

2.3 Wheat Consumption and Importation in Nigeria

Although wheat has been produced for centuries in the Nigerian Sudan, consumption was however very limited to the aristocracy and the rich, and for ritual purposes. Wheat has been used for food items like the coarsely ground recipes resembling cous-cous, a deep frying dough made of fine flour, chin-chin and pan cakes, and hand rolled sphagetti (Taliya) (Andrae and Beckman, 1985: 19). Others are Alkaki, Gurasa, Alkubus, Algaraqis, Gudun Kurna etc.

Earlier research showed that wheat consumption was introduced into Nigeria on a modest scale. The consumption however grew with the growth of towns, the working class and the Salariat (Andrae and Beckman 1985:1). It began as a luxury but later transformed into the urban diet and later again into a staple for the entire urban centres.

With the massive monetisation of the oil surplus of the post-civil war economy however, culminating in the huge importation of wheat and wheat flour, consumption of wheat particularly wheat bread was entrenched in the urban diet. It is now eaten in its raw form or with tea, fish etc.

The consumption of wheat, like other imported food items, were mostly entrenched due to decline in agricultural production in the 1970s, which brought about rural-urban migration. Wheat consumption and importation also became increasingly important in view of the rapidly increasing urban population that are mostly engaged as industrial workers, traders, hawkers etc.

Wheat bread consumption also fits into the need of the urban diet because unlike the traditional crops, which takes time to process, it is a 'fast food' and can also be preserved for sometime. This is unlike traditional food which can easily turn sour, fermented or dry in a short period especially in the tropical climate (Andrae and Beckman 1985: 20).

The fact that bread is a fast food makes it convenient for the working class, who were found to be mostly migrants without their families to cook traditional food for them. Though other food items processed from wheat like semovita and macaroni, take time to prepare, but they were actually pre-prepared and hence making them easy to cook unlike sorghum for example, which takes more time to prepare. Bread does not require any preparation. This might be the reason why tea shops can be seen along the streets in Nigeria both in the morning and evening, signifying that bread is not only taken as breakfast but also as dinner (with fish mostly for lunch).

The entrenchment of wheat bread consumption also came in the form of its relative convenience in terms of transportation. Migrant workers used to take it along while travelling home on short holiday (<u>ganin gida</u>) for example.

Due to convenience associated with bread consumption, 81 percent of the grown ups were said to eat bread daily in a Samaru Zaria Survey in 1980 (Andrae and Beckman, 1985:20). There was also report of higher overall consumption of children (95 percent against 69 percent for grown ups record daily consumption). Thirty-two percent eat bread at any time

while one-third of school children in Maiduguri were said to eat bread daily for breakfast (Andrae and Beckman, 1985: 20).

A consumption survey in the context of National Accounts (1974-75) estimated that $\overset{wage}{\angle}$ workers might have the highest per capita bread consumption. The general level of per capita wheat consumption was estimated for the late 1970s as 82gm, for the 25 percent urban population (162gm for Lagos) as against 4.1gm for the rural population (AERLS, 1979:79).

The consumption of bread is also entrenched through its relative cheapness, compared to local staples. The dynamics of the oil economy meant that imported wheat was cheaper relative to locally produced staples. This, coupled with the other advantages highlighted earlier made local staples incapable of competing with it.

In 1980 for example, wheat flour cost ₦13 per 50 kilogram bag or 26 kobo per kilogram. This was then a much lower price for an equivalent weight of sorghum (guinea corn), millet or maize, implying demand preference of the former over the latter (Andrae and Beckman, 1985: 22).

The regulation of price of wheat and wheat flour also by the Federal Government made them cheaper and relatively accessible to flour millers and bakers respectively. The government deemed it important to interfere in the 'wheat question', because as General Buhari said in his 1984 revised budget, wheat could not be included in the selected agricultural commodities declared then for high import duty, 'since bread has become the cheapest staple of our people' (Andrae and Beckman 1985: 2).

The most important source of the wheat consumption was through the opening up of the economy to the international traders on wheat. The major beneficiaries in this respect are the United States agriculture (the dominant source of the wheat imports and the importers (includes the comprador bourgerisie that engaged in parasitic commerce trading, the flour millers and the bakers).

Wheat import constitute a very serious drain on the nation's foreigh exchange. Between 1981 and 1986 for example, Nigeria imported a total of 5,368,803 tonnes of wheat at the cost of ₦1,439,509,000, out of which 5,007, 269 tonnes were imported from the United States of America (USA) at the cost of ₦1,352,026,000 (Newswatch 1989). Prior to the beginning of systematic depreciation of the naira from September, 1986, the total value of the imports was $2.5 billion, out of which $2 billion went to the United States over the six year period.

This situation was however different in the early part of the century (Colonial Nigeria). In 1910 for example, only 20 percent of flour imports came from the United States and Canada, the remaining percentage coming from Britain and Germany. The situation however tilted in favour of the United States as from 1936, when 98 percent of Nigeria's imports of wheat was supplied by them (Andrae and Beckman 1985:46).

The dominance of United States on wheat exports cannot be peculiar to Nigeria alone as the USA controls about 45 percent of World wheat exports during the five year average, 1978/79-82/83 as table 2.4 below shows:

Table 2.4: Exporters' Share in the World Trade in Wheat

Countries	1978/79 - 82/83		1986 - June 1991
	'000 Tonnes	Percent	Million tonnes
Argentina	5,057	5.6	N.A
Australia	10,740	11.9	N.A
Canada	16,545[1]	18.4	92.92
EEC	11,661[2]	12.9	94.2
USA	40,383[3]	44.8	171.95
Others	5,743	6.4	N.A
World Total	90,129	100.0	359.07

Sources: Andrae and Beckman 1985; 28(1978/79-82/83);USDA, 1991.

Notes 1) Including Wheat exported to the EEC and subsequently re-exported by the latter as flour under onward processing arrangements (TPA)

2) Excluding TPA

3) Including TPA

N.A = Not Available

The huge market outlet for the U.S economy was therefore so much important to the extent that import ban was vehemently opposed by both the American Ambassador to Nigeria on the one hand and the local beneficiaries, viz:- the flour millers, importers and the Association of Masters' Bakers, signifying the extent of the entrenchment of consumption.

Perhaps the most crucial way in which wheat consumption was entrenched in the Nigerian food economy was through the systematic penetration of Flour Mills into the Nigerian industrial scene. The flour mills depend for almost 100 percent on imported wheat for their raw materials. The market outlet was therefore both for investment in flour milling

industry and wheat importation.

The other stage of wheat penetration was through the bakery industry. Although the bakery industry was part of those industries tagged as part of small-scale industries, implying 100 percent indigenous ownership control and government support, penetration here has been in the form of dependence on processed flour from imported wheat and foreign automated machines. The details of the history of penetration of wheat through the flour milling and bakery industries is now our subject of discussion.

2.3.1. The Flour Milling Industry

Perhaps the most important way in which wheat importation and consumption was entrenched in the Nigerian food economy were through the setting up of the flour mills, charged with the responsibility of processing the wheat into flour and animal feeds.

During the colonial period, the flour that was consumed in Nigeria was imported. As from 1962 onwards however, a process of localising wheat processing into flour began to take shape. The state restricted its responsibility to that of importing wheat to serve as raw materials in the ever growing flour milling industry, especially at the post-civil war oil boom era.

The dynamics of the oil economy necessitated the expansion of, and setting up of new flour mills to cope with the increasing national demand for wheat flour. The first flour mill was set up in Lagos, the Flour Mills of Nigeria (FMN) in 1962.

Wheat was then imported from the United States (hard red winter wheat, dark Northern spring wheat) and from Canada (Canadian Western red), which resulted in flour of 12.5-13 percent protein of good bread making quality (AERLS 1979:15). The structure of wheat and wheat flour imports is being provided in table 1.1 (chapter 1.1).

The first flour mill set up in Northern Nigeria was in Kano in 1975, with an initial installed capacity of grading 250 tonnes of wheat per day, producing 73 percent of flour, Seven (percent of Semovita and 20 percent of bran animal feeds. The capacity rose to 1,400 tonnes by 1981, with a further 1,400 increase then under way. The FMN in Lagos, has 60 percent ownership at the Kano based Northern Nigeria Flour Mill (NNFM). The FMN in Lagos is itself 40 percent owned by an Ex-Greek firm, Excelcior Shipping, a subsidiary of United States based West Wind Africa Shipping Company (Andrae and Beckman, 1985:34).

The FMN, which dominate the flour milling industry in Nigeria, produces apart from flour for bread (85-90%), also produces semovita (10%), biscuit flour (4%), pasta (below 1%), whole wheat flour (below 25%) and less than 300 tonnes of self raising flour. The wheat was said to be milled at 75-76 percent extraction rate, with the offals being palleted and exported to Europe for animal feeds. The Kano mill was an exception here as it had developed a market for its offal with local animal feed companies. (AERLS, 1979:15).

Although the mill in Kano, was supposed to be an outlet for locally produced wheat, only 600 tonnes was received

from Gamboru (Borno State in 1976). The mill therefore depended on the ever expanding wheat import for its raw materials (AERLS, 1979:15). The technological backward linkage effect was therefore very negligible at the mills.

Prior to the exacerbation of the fiscal crisis of the Nigerian state, the flour mills mostly operated at full capacity as the ports were never dry of imported wheat. The market was expanding and money to import was forthcoming. The flour milling industry therefore experienced a flourishing situation.

The capacity and proposed establishment of flour mills in Nigeria as at 1983/84 has been summarised below:

Table 2.5: Wheat Flour Mill in Nigeria: Current and Proposed Capacity as of 1983/84 (according to Northern Nigeria Flour Mills, Kano (NNFM, March 1983)

1. Operating Early 1983		Tonnes/day
Flour mills of Nigeria (FMN)	Apapa, Lagos	2,400
Northern Nigeria Flour Mills (NNFM)	Kano	1,400
Niger Mills Co. Limited	Calabar	240
Crown Flour Mills	Tin Can Island (Lagos)	220
Ideal Flour Mills	Kaduna	300
Port Harcourt Flour Mills	Port Harcourt	600
Life Flour Mills	Sapele	500
Nigeria Eagle Flour Mills	Ibadan	400
Total Operating Capacity (of which in FMN related establishments: 4,040)		6,060

2. Proposed For 1983/84

a) New Mills		Tonnes/day
Maiduguri Mills	Maiduguri	400
West African Mills Limited	Onitsha	400
Enugu Flour Mills Limited	Enugu	200
Manilla Flour Mills	Owerri	520•
Mix and Bake Flour Mills Ltd	Warri	300
Raak Flour Mills Ltd.	Kano	300
Gold Medal Products Ltd	Ewekoro	200
Total Proposed Capacity in New Mills (of which FMN related establishments: 400).		1,920
b) Extended Capacity in Existing Mills		
Flour Mills of Nigeria	Apapa, Lagos	1,000
Northern Nigeria Flour Mills	Kano	1,000
Niger Mills Limited	Calabar	440
Total Proposed Expanded Capacity (of which in all FMN related establishments)		2,440
Total New Capacity by 1984 according to NNFM (of which in FMN related establishments: 2,800)		4,320
3. Total Projected Capacity by 1984 (of which in FMN related establishments: 6,840)		10,380

• Capacity according to Rumera & Co. 1981 "feasibility study for the establishment of a flour mill"

Source: Andrae and Beckman, 1985: 35.

Since the FMN dominated the flour milling industry, then logically it is the United States capital that dominated the industry, as a U.S. firm owned 40 percent of the FMN.

The flour millers have been persistently calling for the lifting of the ban on imported wheat, by arguing that local wheat cannot sustain their installed capacity level (mostly operating below 5 percent), and that this constitutes a serious loss to the government in terms of employment generation, the chain of which extends from the importers, flour millers, bakers, distributors and vendors.

The flour millers argued that import ban denies the consumers access to bread. It was argued that since the price elasticity of bread is less than unity, implying that bread is no more a luxury but a staple (an increase in a loaf from 50k to ₦5.00 does not show a significant reduction in demand), there is need for SAP relief in terms of wheat importation (Njoku, 1990:11).

The flour mills also argued that, the import ban has in no small measure contributed to the smuggling of flour into Nigeria at the expense of Nigerian domestic economy. Table 2.6 below shows the increase in the price of smuggled flour and bread as a result of the import ban:

Table 2.6 : Prices of Smuggled Flour and Bread After the Import ban

Item	₦ Pre-ban	₦ Post-ban	(₦) Current Prices
Local Flour	19.20/bag	300-350/bag	420-450/bag
Smuggled flour	Nil	280-300/bag	580-600/bag
Local bread	0.50/loaf	4.00-5.00/loaf	10.00/loaf
Smuggled imported bread	Nil	(not foreseen)	15.00/loaf

Source: Rewane, 1990:13

One might note that, while a bag of flour was ₦19.20 before the ban, its current price is around ₦420-₦500. Smuggling therefore prosper at the post-wheat import ban period, due to shortage and high cost of local flour.

The flour mills therefore argued for the utilisation of comparative advantage in terms of producing other grains like rice and maize instead of wheat. They agreed with the government's call for backward integration, but only in the form of engaging in productive ventures that will generate them enough money to be allowed to import wheat. This is because they felt local production can satisfy their needs only when they might have been long dead.

2.3.2 The Bakery Industry

The consumption of bread began at the coastal parts of Nigeria after 1835 when many Africans were repatriated from Brazil. Bakeries were then set up at Sapele, Warri and Calabar after 1900, and later spread inland on communication routes. After 1915, West Indians, pioneered commercial baking through one shackleford, and introduced a mechanical kneading device - the dough brake which hastens and improve fermentation (AERLS 1979:17).

To increase market penetration, a system of commission was introduced by way of sales through vendors. The increasing demand for wheat in the 1940s, was taken as an advantage by Nigerians trained as bakers in the colonial army. They took the advantage of having skilled labour to exploit the expanding market.

With the massive expansion in the importation of wheat, the bakery industry, like the flour milling industry witnessed an unprecedented rate of expansion. The total number of bakers was estimated in 1981 to be about 4,000 employing some 35,000 people. This was even seen as an under estimation considering the fact that 135 bakeries existed in the town of Kaduna alone (Andrae and Beckman 1985:46).

In Kano State, estimates put the total number of bakeries as 644 (Kano State, 1985) and their categorisation as part of the small-scale industries further gave it an opportunity for government supportive services in loans, protection etc.

The following table shows the rate of increase in the number of bakeries recorded by both Kilby (1961) and the Federal Industrial Directory (1980). This brings to point the increasing trend in the industry's expansion caused itself by the booming wheat economy.

Table 2.7; Bakeries with over 10 persons employed in Eastern and Northern reqions(a) - recorded by Kilby, 19G1 and Federal Industrial Directory, 1980

	Kilby, 1961	Federal Industrial Director (1980)
Eastern Reqion:		
Aba		4
Abakaliki		9
Calabar	1*	10
Enugu	3	24
Ikot Ekpene		1
Onitsha	13	14
Owerri	2	7
Oron	1	1
Port Harcourt	3	12
Umuahia-Ibeku	3	17
Yuyo	1	3
Northern Reqion		
Ilorin		2
Jos	2	8
Kaduna	1	4
Kano	2	21
Zaria	2	2

Source: Andrae and Beckman, 1905:57

Notes a) earlier regional delimitation* The Eastern region referring to present day Rivers, Imo, Anambra, Cross Rivers and Akwa Ibom States. The Northern region refers to present day Kaduna, Katsina, Kano, Kwara, Bauchi, Benue, Borno, Gongola, Niger, Plateau and Sokoto States.

The expansion of the bakery industry also saw the emergence of ultra-modern bakeries, notable among which were Gobarau Bakery in Katsina and Wonder Baking Company in Lagos. The Lagos bakery involved huge investment to the tune of N2.5 million. The bakery handles 150 bags of flour in three

shifts a day with a further intension of expanding it to produce twice the above amount as at 1981 (Andrae land Beckman, 1985: 58).

Apart from some of the above large scale bakeries, bakery industry was also seen by various state governments in Nigeria as an attractive industry worth state financing as it provides employment opportunity at the grassroot level.

The interests of the bakery industry are mostly represented by Association of Masters' Bakers. Established in 1951, the major goal of the association was that of protecting the interest of the bakers in terms of raw material supply, ownership (by Nigerians) etc.

In 1961, for example, the association was able to prevent the setting up of a bakery by a subsidiary of United Africa Company in Port Harcourt and hence, setting the precedent of reserving the industry for Nigerians. Again in 1980, the Anambra-Imo branch of the association resorted to a bakers' strike in protest against the high price of flour (Andrae and Beckman, 1985: 46).

The quality of flour is of great concern to the small baker, 'who does not measure out ingredients exactly, who is unable to avoid falling temperatures in the brick over during baking, and who may have to vary the fermentation time according ,to temperature and humidity' (AERLS, 1979:15).

The quality consciousness meant that the baker became accustomed to the Golden Penny flour produced by the FMN for example. The importance attached to flour quality might be the reason why when the first flour mill was set up in 1962,

the Association of Masters' Bakers staged a demonstration in protest against the duties imposed then, on imported flour, due to fear of perceived poor quality of local flour (Andrae and Beckman, 1985: 46).

Like the flour mills, the bakers were vehemently against the wheat import ban, because they basically draw their backward linkage to the flour mills. Since the flour mills depend on continued importation of wheat to operate at full capacity, the logical conclusion implied that the wheat import ban meant under capacity utilization and in some cases absolute closure of the bakeries.

The bakers were also against the import ban because local production of wheat meant increasing price of flour, because of the relative high price of locally grown wheat.

The import ban on wheat and other macroeconomic policy measures under the SAP, meant that the bakery industry, together with flour milling industry will have to depend on locally grown wheat for their operations. For the flour milling and bakery industries to survive therefore, massive wheat production programme will have to be pursued to catch up with the huge import level of the early 1980s.

2.4: Wheat Production, Consumption and Importation: Trend in Sub-Saharan Africa

The trend in wheat production, consumption and importation in sub-Saharan Africa depicts an unbalanced growth situation where production is not matching up with the trend in consumption and importation.

Whereas production of cereals for example, expanded at 1.7 percent per annum in 1964-80, volume of imports rose by 8.2 percent per annum (See table 2.8). Exports of cereals were very limited to few countries in Sub Saharan Africa - wheat (Zimbabwe), rice (Malawi) and Maize (Tanzania, Kenya and Zimbabwe) (See table 2.9).

Wheat imports more specifically grew rapidly in 1961-80 by 12.3 percent per annum in Sub Saharan Africa (See table 2.10). In spite of projected slow down in the rate of increase in imports of wheat, most of the wheat consumed in Sub Saharan Africa were imported, as it became (together with rice) the preferred food with much higher income elasticity than other coarse grains (maize, millet and sorghum).

The consumption of wheat (and rice) came to be financed through consumer subsidies, food aid and indirect subsidies through overvaluation of local currency. Subsidised prices of wheat were said to have not only depressed prices of traditional crops, but had also destabilised them (Singh, 1984:3-4).

The need for large-scale domestic wheat production therefore became imminent in most Sub Saharan African countries, if they are to maintain their increasing consumption levels, without adversely draining the scarce foreign exchange on financing imports.

Table 2.8 WHEAT PRODUCTION

	Actual				Projected			Growth Rates				
	1961	1970	1975	1980	1985	1990	1995	1961-80	1970-80	1980-85	1985-90	1990-95
	('000 MT)							(% Per Annum)				
Industrial Countries	80,599	93,465	131,007	153,414	180,500	213,600	252,500	2.7	4.1	3.3	3.4	3.4
Centrally Planned Economies	80,227	119,485	91,218	127,710	132,200	139,000	149,700	2.7	0.7	0.7	1.0	1.5
Developing Countries	67,692	105,449	137,880	163,409	201,700	246,600	295,800	4.6	4.5	4.3	4.1	3.7
SUB-SAHARA	911	1,228	1,465	1,247	1,400	1,560	1,760	2.2	0.1	2.3	2.2	2.4
Ethiopia	650	630	699	469				-1.6	-4.2			
Kenya	109	221	158	210				3.0	0.6			
Sudan	26	115	276	231				14.0	7.0			
Zimbabwe	1	54	126	155				34.1	11.8			
Tanzania	6	71	83	68				9.4	-2.9			
Lesotho	58	58	45	32				-1.9	-1.5			
Nigeria	16	19	18	21				1.7	1.5			
Angola	20	12	10	10				-4.3	-3.3			
Uganda	0	8	14	15				17.9	10.9			
Burundi	4	13	13	4				-3.1	-11.5			
Other Developing Countries	66,781	104,221	136,415	162,162	200,300	245,040	294,040	4.7	4.6			
World	228,517	318,399	360,105	444,534	514,400	599,200	698,000	3.4	3.2	3.0	3.1	3.1
SUB-SAHARAN SHARE (%)	0.4	0.4	0.4	0.3	0.3	0.3	0.3					

Source: Singh, 1983:106

Table 2.9 WHEAT EXPORTS

	Actual				Projected			Growth Rates				
	1961	1970	1975	1980	1985	1990	1995	1961-80	1970-80	1980-85	1985-90	1990-95
	('000 MT)							(% Per Annum)				
Industrial Countries	33,001	41,809	61,084	81,356	103,890	127,387	156,184	4.2	5.2	5.0	4.2	4.2
rally Planned Economies	5,092	5,662	4,529	3,646	1,900	1,508	1,500	-0.2	-7.5	-12.2	-4.5	-0.1
Developing Countries	1,312	2,680	1,920	5,087	6,499	7,699	8,499	2.2	12.3	5.0	3.5	2.0
SUB-SAHARA	40	46	2	6	8	10	11	-12.1	-21.4	6.4	3.5	2.0
Kenya	30	44	1	0				-23.9	-46.7			
Zimbabwe	3	0	0	6				1.4	5.0			
Lesotho	6	2	@	0				-19.3	-56.1			
Tanzania	1	0	0	0				-15.6	0.0			
Liberia	0	0	1	0				0.0	0.0			
Ivory Coast	0	@	@	0				-10.6	-14.8			
Botswana	0	0	@	0				19.2	19.2			
Cameroon	0	0	@	0				6.6	6.6			
Senegal	0	@	@	0				14.2	23.5			
Ethiopia	@	0	0	0				39.4	0.0			
Other Developing Countries	1,273	2,634	1,919	5,081	6,491	7,689	8,488	2.3	12.5	5.0	3.5	2.0
World	39,405	50,151	67,534	90,089	112,289	136,595	166,184	3.6	4.5	4.5	4.0	4.0
SUB-SAHARAN SHARE (%)	0.1	0.1	0.0	0.0	0.0	0.0	0.0					

@ Less than 500 MT.

Source: Singh, 1983: 107

Table 2.10 WHEAT IMPORTS

	Actual				Projected			Growth Rates				
	1961	1970	1975	1980	1985	1990	1995	1961-80	1970-80	1980-85	1985-90	1990-95
	('000 MT)							(% Per Annum)				
Industrial Countries	15,055	17,539	17,607	17,252	17,300	18,000	18,200	1.7	-0.1	0.1	0.8	0.2
Centrally Planned Economies	5,832	7,318	13,959	21,834	29,200	36,400	45,600	5.3	7.1	6.0	4.5	4.6
Developing Countries	17,622	23,928	35,767	50,216	65,800	82,200	102,400	4.4	7.0	5.6	4.6	4.5
SUB-SAHARA	341	1,183	1,756	3,075				12.3	9.7			
Nigeria	0	259	407	1,100				21.8	16.2			
Sudan	41	195	119	156				8.7	-2.0			
Ethiopia	0	32	66	385				43.0	38.0			
Zambia	21	107	157	170				12.2	3.6			
Mozambique	33	74	108	192				7.4	6.4			
Senegal	74	112	102	106				4.0	1.4			
Ivory Coast	0	78	76	180				12.3	12.2			
Ghana	0	60	83	131				63.8	8.6			
Angola	26	83	91	70				5.8	-4.2			
Zaire	@	0	103	155				59.5	45.6			
Other Developing Countries	17,281	22,745	34,011	47,141	62,230	77,890	97,055	4.1	6.9	5.7	4.6	4.5
World	38,509	48,786	67,332	89,303	112,300	136,600	166,200	3.8	4.9	4.7	4.0	4.0
SUB-SAHARAN SHAE (%)	0.9	2.4	2.6	3.4								

@ Less than 500 MT.

Source: Singh, 1983: 108

2.5 Conclusion

We have seen in this chapter, that though wheat production dates back several hundred years, its consumption however was on a modest scale, mostly by the aristocracy and the rich in Northern Nigeria. Wheat production was confined to the 'far north' of Nigeria around the fadama low lands.

The dynamics of the oil economy of the 1970s however, saw the beginning of genuine state interest in large scale wheat production, though international expertise backing dates back to the colonial era.

We have also seen that the flour mills served as 'bridge heads' in entrenching wheat importation and consumption. Import substitution in wheat through local production is therefore a very big task in view of the huge import level and an entrenched consumption through the flour mills and the bakeries. In the next chapter, we will take a look at the background to Accelerated Wheat Production Programme.

2.6 Bibliography

Abraham, I.E. (1990). 'Self-Sufficiency in Nigerian Wheat Production: The need for Improved Irrigation Water Management'. Proceedings of the Nigerian Institute of Social and Economic Research /Friedrick Ebert Foundation of West Germany organised National Symposium on Prospects for Wheat Self-Sufficiency in Nigeria. Ibadan: NISER, July 29th - August 1st.

(AERLS) (1979). Agricultural Extension and Research Liaison Services, Ahmadu Bello University. Report on Wheat Production and Marketing in Nigeria, Zaria.

Andrae G. and Beckman, B. (1985). The Wheat Trap: Bread and Under development in Nigeria, London: Zed Books.

Beckman B. (1982). 'Whose State? State and Capitalist Development in Nigeria'. Review of African Political Economy. No. 23 January-April.

Borlaug, N.E (1968). 'Wheat breeding and its Impact on World Food Supply'. Finlay, K.W. and Shepherd, K.W. (eds). Proceedings of Third International Wheat Genetics Symposium, Canberra 1968 Canberra: Betterworths Co.

(FAO) (1966) Food and Agricultural Organisation. Agricultural Development in Nigeria: 1965-1980 Rome.

Gsanger, H. (1987). 'Agricultural Policies as a Source of Increasing Food Insecurity in Sub Saharan Africa'. Economics, Vol. 35.

Hill, P. 1972). Rural Hausa: A Village and its Setting, Cambridge University Press.

Johnson V.A. and Beemer H.L. (1977). Wheat in the Peoples' Republic of China. Committee on Scholarly Communication with the Peoples' Republic of China, Report No. 6, Washington D.C.: National Academy of Sciences.

Kano State of Nigeria (1985). Directory of Industrial and Commercial Establishments, Statistics Unit, Budget and Economic Planning Directorate, Military Governor's Office, Kano.

Kolawole, A. (1982). The Extent of ujcal Farmers' participation in Large-scale Irrigation Projects in Nigeria: A preliminary Study of South Chad Irrigation Project. Zaria: Centre for Social and Economic Research, Ahmadu . Bello University.

Newswatch (Lagos) (1989), May 8.

Njoku, C. (1990). 'Economics of Wheat (Bread)'. , The Guardian (Lagos) Vol. 7 No.4814 August 31stJl990.

Oculi, O. (1982). 'The Political Economy of the Planning of the Bakolori Project'. Y.B. Usman (eds). Political Repression in Nigeria, Kano. BalaiMohammed Memorial-Committee.

Palmer-Jones, R. (1980). "Why Irrigate in Northern Nigeria? Oxford University (Mimeo).

Redden, R. (etal),(1979). 'History and Status of Wheat Research in Nigeria'«Samaru Miscellaneous Paper, 85, Zaria: Institute for Agricultural Research, Ahmadu Bello University.

Rewane, A.O. (etal), (1990). 'Appeal to President Babangida on Wheat Ban'. Nigerian Tribute (Ibadan). No. 9530 August 22.

Singh, S. (1983). 'Sub Saharan Agriculture: Synthesis and Trade Prospects'. World Bank Staff Working Paper. I i No. 608 July, i

Tufail, M.(1978). 'Wheat Production in Nigeria'. Proceedings of National Seminar on Grain Production, Marketing and Storage, September 26th-27th. .

(USDA) (1991) United States Department of Agriculture. Report on World grain situation and outlook. Washington

Wallace, T. (1979). Rural Development Through Irrigation: Studies in a town on the Kano River Project. Zaria: Centre for Social and Economic Research, Ahmadu Bello University Research Report, No. 3 May.

(1980) 'Agricultural Projects and Land-in |«, Northern Nigeria. ' Review of African Political Economy No. 17 January - April.

Watts, M. and Shenton R. (1984). 'State and Agrarian Transformation in Nigeria'. Barker J. (eds). The Politics of Agriculture in Tropical Africa, Vol. 9 Sage Publications.

Yayock, J.Y. and Misari, S.M. (1990.) 'Wheat Production: Research and Institutional Roles in Attaining Self-Sufficiency in Nigeria'. Proceedings of Nigerian Institute of Social and Economic Research/Friedrick Ebert Foundation of West Germany organised National Symposium on Prospects for Wheat Self-Sufficiency in Nigeria. Ibadan: NISER July 29th-August 1st.

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CHAPTER THREE

3. BACKGROUND TO THE ACCELERATED WHEAT PRODUCTION PROGRAMME (AWPP)

3.1 Introduction

In this chapter, we provide a brief background to the problems of Nigerian agriculture culminating in the AWPP. We also review the policy measures articulated under the SAP geared towards domestic wheat production.

3.2 Impact of SAP on Nigerian Agriculture

Nigerian agriculture was the most important sector in terms of foreign exchange earnings' contribution to the Gross Domestic Product (GDP) in the 1960s. It contributed more than 60 percent of GDP. By the 1970s however, this had gone down to about 20 percent, and further down to 12 percent by the close of the 1970s decade (Economic Update 1987:17).

The 1970s decade also saw the situation of stagnant agricultural production, mounting food imports and rising price level of the imports. The period 1976-83 particularly shows a situation of generally declining trend for staple food crops production and fluctuating, but stagnating trend for aggregate agricultural production index:

Table 3.1 Index of Agricultural Production in Nigeria (1976 - 83 (1975 = 100)[a]

	1976	1977	1978	1979	1980	1981	1982	1983
Crops	88.8	79.7	77.7	71.9	77.7	84.3	85.5	74.3
Staple Food Crops	88.7	75.7	70.8	64.4	67.6	71.6	73.8	61.5
Other crops	89.1	94.0	99.1	104.0	109.4	124.1	122.2	108.1
Livestock	103.2	106.0	109.3	113.4	117.1	94.2	104.4	99.3
Fish	106.2	108.2	111.4	114.8	102.8	104.3	107.5	109.9
Aggregate Index	93.9	88.7	88.5	87.2	89.4	90.1	92.5	83.8

Source: Toyo, 1985,:232

Note a) The average compound rate of decline of staple food crop production is 5.5 percent per year.

The blame on the trend of events in the agricultural sector was attributed by the structural adjustment policy framework to fiscal, trade and exchange rate policies, which were basically features of the oil syndrome (FRN 1986:18).

This point, became more visibly understood when we look at the way in which state policies were geared towards taxing of the producer prices (through unscrupulous activities of marketing Boards), while at the same time encouraging imports through liberlised tariff policy measures and overvalued naira. This situation led to the decline in domestic agricultural production, as state policies on agriculture basically entrenched a kind of cultural dependency where the populace developed the habit of consuming externally produced food.

The various policy measures under the SAP were aimed at restoring the economy back on a sound development by correcting the hitherto serious distortions that characterised it. The Economic Stabilisation Act (ESA) of 1982 was the first of such policies.

The ESA was aimed at adjusting and diversifying the economic base of the nation through changing the export level and composition, and consumption pattern from import preference to local production.

The ESA however, failed to ameliorate the balance of payment pressure and increasing debt crisis, whose servicing increasingly became a burden to the nation's GDP, due to the contradictory nature of the policies and the crisis of a dependent capitalist economy. This culminate in the declaration of fifteen months state of emergency in 1985.

The Economic emergency Act (1985) was designed to stimulate the economy by boosting domestic economic activities, aligning our consumption with our production patterns and stemming the tide of inflation (Nwoko, 1988).

The SAP which is a more comprehensive and articulated policy framework, was designed to restore 'in the medium term a healthier path of national economic development as a component of the integrated world economy' couched under the policy framework of economic reconstruction, social justice and self-reliance (FRN 1986:3).

Since it is realised that improvement in the agricultural sector contributes to the reduction in inflationary pressures and reduced dependence on the external sector for food and agro-industrial raw materials, the SAP is aimed at removing price distortions in agriculture.

The 1987 budget, the first under the SAP, recognised the problems of Nigerian agriculture as declining contribution of agriculture to GDP, low aggregate output and low productivity per acre and man-hour, low aggregate rural farm income and price instability (Ayodele, 1988:7).

The 1987 budget therefore attributed these problems to past policies - poor infrastructural facilities and inadequate marketing and distribution systems which combined to make the entire economy dependent on the external sector for food and agro-industrial raw materials.

The major impact of SAP on wheat production and Nigerian agriculture in general therefore are:-

i) <u>Tariffs and quantitative restrictions on imports</u>

This policy measure is supposed to help in boosting local production of certain agricultural commodities for which the nation was hitherto importing due to overvalued currency. Import curtailment or outright ban is supposed to encourage domestic production of agricultural commodities.

The short run excess demand of agricultural crops due to the import ban, coupled with the abolishing of commodity Boards, were supposed to encourage

domestic production due to anticipated high remuneration, as farmers will be allowed to sell their produce at market-determined rate and hence, independent of state intervention.

ii) Subsidy Withdrawal: The SAP aims at withdrawal of subsidy on agricultural inputs and limiting the responsibility of government agencies like the River Basin Development Authorities to that of water resources management, thereby allowing the market to determine the demand for and supply of the inputs.

Subsidy withdrawal has been one of the most controversial issues in almost all developing countries implementing the SAP. The major argument of the World Bank (derived from the monetarist school) was that subsidised inputs that were targetted at farmers often ended up in the hands of unscrupulous marketing agents. These marketing agents often exploit the advantage of the distorted market to raise prices of agricultural commodities, by first creating artificial scarcity through hoarding. Farmers therefore ended up buying the inputs at a much higher price.

The World Bank therefore argued that, if government allowed the private sector to procure and distribute fertiliser at market-determined rate, there will be efficient allocation of resources and prices might even be lower. The need for subsidy withdrawal on fertiliser and other agricultural inputs was therefore stressed so

as to encourage its economic use and avoid waste (Husain 1987: 50-3).

Although fertiliser consumption is very low in Nigeria, it however remains crucial to the success of the large-scale wheat production programme (AWPP). The consumption of fertiliser at the wheat farms is very high, albeit with some of the problems highlighted by the World Bank; distorted market structure and unscrupulous activities of the middlemen.

Since the fertiliser procurement and distribution division of the Federal Ministry of Agriculture is expected to be fully privatised between 1990 and 1992 (Nigerian Economist Vol. 9, 1989:24), it remains for empirical research to see whether the market can really be perfect in terms of efficient allocation of fertiliser to farmers at market-determined prices.

iii) Realistic Exchange Rate: At the core of the policies articulated under the SAP is the attainment of realistic exchange rate for the naira. The argument was that, an overvalued currency tends to make imports cheap relative to local production of agricultural commodities. This, therefore serves as a disincentive to local production. Exports production were similarly being discouraged by high cost of production in local currency, which also discouraged local agricultural production.

The SAP is supposed to correct these distortions and, through a gradual depreciation of the naira, achieve a realistic exchange rate where the value of the foreign currency vis-a-vis the naira reflects its true scarcity value.

The attainment of this objective will make imports of all categories expensive, leading to higher prices. With increasing local production, a realistic price will however be attained. The immediate agricultural impact of SAP on agricultural exports was to boost price of cocoa for example, from ₦1,600 to between ₦6,000 and ₦7,000 per ton (Usoro 1987:170). Similarly, local production of other agricultural commodities have been boosted.

iv) Provision of Incentives: The major incentive towards agricultural expansion under the structural adjustment programme is the creation of the Directorate of Food, Roads and Rural Infrastructure (DFRRI).

The major aim of DFRRI is the creation of infrastructures necessary for agricultural production, feeder roads construction, provision of storage facilities, borehole construction for minor irrigation schemes, provision of storage facilities etc. In effect, the DFRRI is aimed at transforming agricultural production and raising rural employment and income.

The structural adjustment therefore, is an extreme backing to previous programmes designed to clear the economy from the distortions that have hitherto discouraged agricultural expansion through (Nwoko 1988: 9-10):

a) Open market determination of exchange rate;

b) De-regulation of export controls;

c) Open import system;

d) Realistic pricing of domestic goods such that internal structures of economic activities can be attained through the stimulus to be provided by open market system;

e) Market-determined allocation of foreign exchange.

f) Increased supply of foreign exchange. In this respect, the World Bank's initial agreement in principle was to provide $100 million to the foreign exchange market during the last six months of 1986 and $300 million in 1987.

g) Encouraging local production of raw materials and import substitutes. The ban on the importation of rice, wheat, maize and vegetable oil were therefore aimed at boosting local production of these commodities.

h) Diversification of export base of the economy through realistic pricing of cash crops and other exportable products. In this regard, commodity Boards were abolished and the private sector was allowed to export agricultural commodities on its own. A foreign domicilliary account was set up through which they will supposedly repatriate part of their profit for meaningful investment at home.

i) Stimulation of internal productive capacity of the economy. The market is supposed to achieve this objective through removing all distortions and hence, making agricultural investments profitable.

j) Provision of mass employment in the rural sector. With the massive expansion of the agricultural sector through other policy measures like the import ban and devaluation, the SAP aims at increasing employment in the rural sector and redistribute income in favour of the rural dwellers.

These package of incentives towards boosting agricultural production is what the wheat programme (AWPP) aims to fully exploit, so as to be able to substitute for the huge import level, thereby satisfying national demands.

All the policies that are geared towards agricultural expansion under the SAP are basically interlinked. But the most crucial impact of the SAP on Nigerian agriculture, in relation to wheat production programme, remains the import ban and naira devaluation.

3.3 Accelerated Wheat Production Programme (AWPP)

In May 1986, at the launching of Bendel Flour Mill, Benin, General Babangida announced the banning of the wheat imports as from January, 1987. His perception was said to have been based on the assumption that Nigeria could grow enough of the crop to meet local needs and hence remove the

country from foreign dependence on imports thereby saving foreign exchange (Mousa - Booth 1988:5).

General Babangida expressed government's intention to achieve self-sufficiency in food production in his June 1986 broadcast signalling the beginning of SAP:

> "True national development means increasing economic, financial and technological self-reliance in an enlarging list of products, especially food and other essential wage goods. It is in that context that the recent pronouncement banning the importation of wheat from 1st January 1987 can be appreciated as the most effective way of putting a stop to the country's unwholesome dependence on wheat bread" (Babangida 1987:247).

The President in the same address recapitulated an earlier statement in the 1986 budget, that 'solution to our social and economic problems must be found through our own efforts, at our own pace and on our own volition, consistent with our long term national interest' (Babangida 1987:246). The banning of the wheat import implies that the flour mills would have to look inwards for their source of raw materials. Both flour milling, bakery and other allied industries were against the import ban because it directly touched on their own interest.

Their major argument was that local production cannot match the huge imported volume of wheat. They therefore argued that, while local production is being encouraged, a higher tariff should have been imposed on wheat and flour,

so that the market will have access to the imported ones, albeit at a higher price. For the United States, the major source of Nigeria's wheat imports, the policy was seen as unfair trade sanction, and therefore against the ethics of free trade.

The wheat production programme under the AWPP, was introduced to achieve certain basic national self-sufficiency goals as control of stagflation by moderating food prices and provision of raw materials for the Nigerian flour milling industry where plants were operating at less than 5 percent after SAP was introduced.

The AWPP is also supposed to improve the income of the farmers at the semi-arid regions of Nigeria where dry-season farming was hitherto restricted to vegetables production and very low quantities of wheat (Akinyosoye, 1990:5). Due to absence of guaranteed market prior to 1986, farmers produced wheat mostly for home consumption on a small-scale.

With the provision of incentives by both the federal and state governments in the wheat producing areas however, wheat production in Nigeria now operates under the AWPP, concentrating in states like Kano, Katsina, Kaduna, Bauchi, Borno, Gongola, Sokoto, Plateau, Niger and Kwara States.

Four months after the announcement of the import ban on wheat, then Governor Mohammed Ummaru of Kano State conceived of a package for the wheat challenge. He directed the state Ministry of Agriculture to examine the potentialities of irrigated agriculture for the purpose of producing 1 million tonnes of wheat in the state (Mousa-Booth 1988:6).

The Ministry of Agriculture was also expected to come up with a workable action package, consisting of both short and long-term strategies for the purpose of realising the projected production target. It was this, that matamorphosed into the Accelerated Wheat Production Programme (AWPP) in Kano State.

A technical committee was set up to examine the modalities and programmes of action for the AWPP. This led to the establishment of a wheat committee in the State Ministry of Agriculture and Zonal wheat committees in each of the zones divided according to the established divisions by the World Bank sponsored Kano Agricultural and Rural Development Authority (KNARDA). The following are the zones:-

i) Zone I Rano
ii) Zone II Danbatta
iii) Zone III Birnin Kudu
iv) Zone IV Gumel

The AWPP started with a ₦5 million grant for price subsidy on inputs and other supportive services. The cost of inputs, which include wheat seeds, land clearing and preparation, irrigation pumps, syphones and polythene and jute bags, then attracted 50 percent subsidy (Akinyosoye 1990: 5-7).

Official report indicates that the 1986/87 wheat season target was exceeded by over 80,000 tonnes (over and above the 100,000 tonnes projected). In the 1987/88 season, about 285,000 tonnes were produced from the 115,525 hectares cultivated, which was above the 220,000 tonnes envisaged. This was to

yield about ₦855 million to the farmers at then market rate of ₦3,000 per tonne (Dugurawa, 1989).

The table below shows the total number of hectares cultivated in the 1987/88 wheat farming season, based on previous 20 local governments' structure:

Table 3.2: Total Number of Hectares Cultivated in the 1987/88 Wheat Farming Season

Zone I	
Gwarzo Local Government	1,000 hectares
Rano Local Government	10,500 "
Tudun Wada Local Government	2,500 "
Dawakin Kudu Local Government	6,000 "
Kadawa*	20,000 "
	40,000 "
Zone II	
Kazaure Local Government	5,255 hectares
Danbatta Local Government	3,335 "
Bichi Local Government	2,990 "
Dawakin Tofa Local Government	2,731 "
Minjibir Local Government	1,817 "
Gezawa Local Government	4,025 "
	20,153 "
Zone III	
Birnin Kudu Local Government	3,650 hectares
Dutse Local Government	1,975 "
Gaya Local Government	4,375 "
Gwaram Local Government	3,665 "
Sumaila Local Government	2,960 "
Wudil Local Government	3,480 "
	20,105 "

Zone IV		
Ringim Local Government	8,054	hectares
Jahun Local Government	9,801	"
Kaffin Hausa Local Government	7,286	"
H.J.R.B.D.A./Hadejia Local Govt.	10,129	"
	35,270	"

Source: Mousa-Booth, 1988:33

Noté a) (•) Irrigated zone on the Kano River.

The positive initial results achieved were attributed by the government to growth of farmers' interest in the programme and the remunerative advantage associated with wheat farming due to downward adjustment of the naira, dismantling of fixed producer prices (wheat does not have one because of its then relative unimportance) and above all, the import ban (Mousa-Booth, 1988:6 and 17).

In the 1988/89 wheat season, the State Ministry of Agriculture approved the construction of 9 new wheat irrigation schemes of 40 hectares each at Bunkure, Balare, Kafin Chiri, Agufa, Kunchi, D/Karya, Bagwai, Abir and Wala. The schemes were to be financed by a federal government-pledged grant. Additional 200 hectares were said to be developed in the 1988/89 season.

Another area where the Ministry felt it could place more hectares under cultivation was by construction of washbores and tubewells in fadama areas where formal irrigation structures were lacking (Kano State 1989:5-6).

The State government, in collaboration with the local governments, embarked on, and established tubewells and wash bores in the fadama areas; by 1988/89 6,337 washbores and 3,882 tubewells were drilled as table 3.3 shows:

Table 3.3: Tubewells and Washbores Drilled during the Wheat Production Season, 1988/89

I -Washbores

Zone	1988	1989	Total
Zone I	1,302	1,404	2,706
Zone II	547	588	1,135
Zone III	936	1,094	2,030
Zone IV	203	263	466
			6,337
II - Tubewells			
Zone I	12	12	24
Zone II	612	779	1,391
Zone III	322	449	771
Zone Iv	693	1,003	1,696
			3,882

Source: Kano State, 1989:6

The State government also provided a total of 200 tractors, 9 crawlers, 12 combine harvesters and 20 stationary threshers based on total hectarages planted by each zone as table 3.4 below shows:

Table 3.4 Number of tractors, crawlers, combine harvesters and stationery threshers according to zones

Zone	Tractors	Crawlers	Combine Harvesters	Stationery Threshers
Zone I Rano	58	2	6	2
Zone II Danbatta	52	4	2	6
Zone III Birnin Kudu	38	2	2	4
Zone IV Gumel	52	1	2	8
Total	200	9	12	20

Source: Kano State, 1989:5

It was assumed that timely availability of these equipments to farmers will help in further boosting wheat production. Though the cost of hiring the equipments were relatively low (See table 3.5 below,)but the handling of the equipments have been characterised with inefficiency and poor management.

Table 3.5 Cost of hiring equipment

I -	Tractor charges	
	Slashing	₦10 per acre
	Ploughing	₦20 " "
	Harrowing	₦20 " "
	Ridging	₦10 " "
	Combine Harvester	₦10 " "
	Border Making	₦ 6 " "
	Threshing	₦ 6 " "

Table 3.5 (contd.)

II -	Heavy Plant	
	Cat D7 Land clearing	₦1,000 per day
	Cat D6 & D5 land clearing	₦ 800 per day
	Cat D7 Rome Ploughing	₦ 30 per day
	Cat D5 and D4 Row Ploughing	₦ 25 per acre

Source: Kano State, 1989

Input procurement and distribution also received a boost under the AWPP. A total of 3,298.4 tonnes of wheat seed, 3,475 2 inch and 49 3 inch water pumps, 74 2 inch and 26 3inch lay flats and 1,050 seghts of agrolyser were procured and sold to farmers at fifty percent subsidy.

The zonal breakdown of the distribution is summarised below:-

Table 3.6: Inputs distribution during the 1988/89 Wheat Season According to Zones

Zone	Wheat Seed (Tonnes)	Water Pump	Layflats	Agrolyser
Zone I	1015	2"-750	2"-8	400 schts
Zone II	399.7	2"-950	2"-10	300 schts
Zone III	310	2"-640	2"-8	
		3"-7	3"-8	150 schts
Zone IV	540	2"-862	2"-24	200 schts
Headquarter*	1033.7	2"-273 3"-37	2"-24 3"-10	-
Total	3298.4	2"-3475 3"-49	2"-74 3"-26	1,050 schts

Source: Kano State, 1989:7

Note (*) refers to headquarters of Kano State Ministry of Agriculture and Rural Development.

As it is the intention of government to fully privatise the procurement and distribution of fertiliser under the SAP, the percentage of fertiliser subsidy has seriously declined from 50 percent as from the beginning of AWPP in 1986/87 to 25 percent in 1988/89. This privatisation measure, is expected to redirect inputs to where they are most needed, determined by the forces of demand and supply as earlier explained.

In the 1988/89 wheat season, the government officially announced the achievement of over 455,000 metric tonnes of wheat production, out of the over 500,000 tonnes envisaged (Dugurawa 1989). The 1988/89 harvesting season was officially launched by the President of Nigeria on 19th April, 1989 at Jakarade irrigation scheme.

The following table shows the proposed and actual hectarages planted and yield in the respective zonal areas:-

Table 3.7: Proposed and Actual hectarages Planted and Actual Yields in the 1988/89 Wheat Season

Zone	Proposed Hectarages	Hectarages Planted	Expected Yield (in tonnes)	Actual Yield (in tonnes)
Zone I	58,917.00	58,000.0	147,292.5	144,418.0
Zone II	52,473.4	56,737.0	131,183.5	141,273.2
Zone III	51,337.0	33,846.0	128,342.5	84,275.4
Zone IV	44,975.0	34,995.8	112,437.5	87,138.4
Total	207,702.4	183,578.8	519,256	457,105

Source: Kano State, 1989:8

At the then price level of ₦4,100 a tonne and an average yield of 2.5 tonnes per hectare, a small-scale farmer cultivating one and a half of a hectarage earns an income of ₦5,125 (Dugurawa, 1989).

Given the 457,105 tonnes realised at the 1988/89 wheat farming season, Kano state produced wheat worth ₦1.87 billion at the then price level of ₦4,100 a tonne, thereby enhancing the socio-economic standard of the entire 139,423 farmers who have participated in the scheme, and reducing the rural-urban drift, which occurs during the dry season (Dugurawa, 1989).

In the 1988 fiscal year, Kano state government voted the sum of ₦1.96 million under its crop rehabilitation programme for the procurement of pumps, seeds and syphones, apart from the sum of ₦10,111,667 expended in 1987 for the purpose of purchasing tractors (Kano state, 1988: 279-80).

In the 1988/89 wheat farming season, apart from the budgetary allocation of ₦17 million to the programme (AWPP), the state government also purchased five combine harvesters at the cost of ₦1,97 million (Dugurawa, 1989). In 1988, the Federal Government also made a pledged grant of ₦25 million, granted for the rehabilitation of Bagauda dam which collapsed in the same year (Akinyosoye 1990).

With the launching of the National Rolling Plan in 1990, the AWPP got an allocation of ₦40 million (Kano State, 1990 6:5). Out of this, ₦12 million was budgetted for the procurement of input seeds, irrigation lay flats, and water pumps (Kano State 1990 : 377-79).

The agricultural mechanisation and tractor hiring system also got a rolling plan allocation of ₦30 million, with ₦24.4 million set aside for the procurement of 5 tractors/implements and 6 combine harvesters (with parts). This was however, supposed to be financed by Bank loan.

About 60,000 hectares of fadama land were also set aside for the development of water irrigation scheme, in addition to the development of all minor irrigation schemes for the purpose of expanding the areas under wheat cultivation.

In this regard, a loan package worth ₦37.5 million from the government of Czechoslovakia was to be used in 1990 for the establishment of 100 units of 40 hectares each, with at least one fadama irrigation scheme to be located throughout the state (Kano State 1990a: 379). The units will be equipped with pumps and other irrigation facilities.

The state government also set aside the sum of ₦1 million for the construction of canal drains, land clearing and levelling for the development of additional 50 hectares of irrigated land (Kano State 1990a:378).

In 1991, the state government also voted the sum of ₦6,225,000 for the procurement of 700 tons of seeds, refurbishing of tractors and combine harvesters, while ₦2,300,000 was for irrigation development, which include, subsidy on 100 units (3" and 2") of water pumps, 500 units of syphones, 100 units of layflats, as well as development of additional 100 hectare of irrigation land at Jakara (40 hectares), Ringim Wudil and Jangachi (20 hectares each) (Kano State 1991:244-45).

The huge expenditure in the wheat programme (AWPP) in Kano State, is reflected in increasing number of hectares under wheat cultivation and the actual yield over the years as can be seen in the following table:

Table 3.8: Target level and Actual Level of Wheat Production Achieved over the Years

Year	Area Targetted	Actual Area Planted (ha)	Expected Yield (tonne)	Actual Yield	Amount Expected
1986/87	100,000	75,000	100,000	187,000	2.7 million
1987/88	150,000	115,525	220,000	285,000	25.2 "
1988/89	207,702.4	183.578.8	519,256	457,105	32.2 "
1989/90	250,000	215,000	625,000	575,000	16.5 "

Source: Kano State, 1989 and 1990c.

This huge expenditure by the government was not only at the level of inputs procurement and development of additional land for wheat farming alone. Publicity campaign also got its share; ₦200,000 having been expended in 1988/89 season for example.

One could not therefore, but glaringly see some stickers that seeks to depict the wheat programme (AWPP) as being synonymous with a kind of nationalistic goal like, wheat: A chance for a better economy; wheat: Grow it or import it; Grow wheat to support SAP; Grow wheat for self-sufficiency, etc.

The objective of this study therefore, is to see whether the AWPP can really accelerate wheat production in Nigeria (at a minimum cost) to a level capable of closing the

huge import gap and hence, satisfying the internal needs of the economy.

3.3.1 Accelrated Wheat Production Programme Monitoring and Implementation Committee

With the import ban on wheat and the launching of AWPP, a challenge was thrown to the agriculture industry in Kano State (and elsewhere in the other wheat growing areas of Northern Nigeria), to boost wheat production.

The Kano State Ministry of Agriculture took up the challenge with the establishment of a technical committee known as the AWPP Monitoring and Implementation Committee, simply tagged 'wheat committee'.

The wheat committee was charged with the responsibility of among others, working out modalities and programmes of action for domestic wheat growing. It was also charged with mobilising resources to make the programme a success.

These resources include land and water (boreholes, dams and irrigation structures such as main and distribution canals, drains, reservoirs, etc), and adequate and timely provision of inputs such as improved seeds, irrigation pumps, fertiliser, combine harvesters, tractors and earth-moving machines.

The wheat committee is also charged with the responsibility of exploring means of increasing the areas under wheat cultivation through development of new and minor irrigation schemes.

The wheat committee is also expected to clear the market from perceived distortions that have hitherto made producer prices less attractive. The prices were supposed to reflect their true scarcity values for the AWPP to be attractive to farmers. The wheat committee is to report all findings, problems and suggestions towards the success of the programme to the state government.

The membership of the committee, which is dominated by technocrats and Engineers in the state ministry of Agriculture and representatives of Kano Agricultural and Rural Development Authority (KNARDA), Kano Agricultural Supply Company (KASCO) and Hadejia-Jama'are River Basin Development Authority (HJRBDA), are as follows:-

1)	Commissioner, Ministry of Agriculture and Rural Development (MARD),	Chairman
2)	Director-General (MARD)	Member
3)	Director, Finance and Supply (MARD)	"
4)	Director, Planning, Research and Statistics (MARD)	"
5)	Director, Agricultural Services and Produce Inspection, (MARD)	"
6)	Director, Agricultural Engineering (MARD)	"
7)	Director, Irrigation Engineering (MARD)	"
8)	Manager, KNARDA, Zone I	"
9)	" " Zone II	"
10)	" " Zone III	"
11)	" " Zone IV	"

12)	Representative, KASCO	Member
13)	" HJRBDA	"
14)	Secretary, KNARDA, Zone I	"
15)	" " Zone II	"
16)	" " Zone III	"
17)	" " Zone IV	"
18)	Deputy Director, (Agricultural Services and Produce Inspection (MARD)	"
19)	Deputy Director, Agricultural Engineering (MARD)	"
20)	Deputy Director, Irrigation Engineering (MARD)	"
21)	Deputy Director, Planning, Research and Statistics (MARD)	Secretary

Simiarly zonal wheat committees were set up with representatives of HJRBDA, KASCO and the traditional institution. The zonal managers of KNARDA serve as Chairmen of their respective zones.

The zonal wheat committee is supposed to forward all problems and/or suggestions on the means of boosting wheat production to the state wheat committee, who control the financial vote on the programme.

The need to streamline strategies, monitor and assess the performance of each of the zonal implementation committees, led to the setting up of four sub-committees. They were to report to the State Chairman any problem(s) that might hinder the success of the programme.

The committees are as follows:-

Zone I Director-General and Deputy Director, Agricultural Services and Produce Inspection.

Zone II Chairman (AWPP Wheat committee) and Director, Agricultural Services and Produce Inspection.

Zone III Chairman (AWPP wheat committee) and Deputy Director, Planning, Research and Statistics (Secretary of the Committee).

Zone IV Director, Planning, Research and Statistics and Director, Finance and Supply.

In late 1989, appraisal tours were conducted in three phases so as to have a first hand information on the programme's successes and/or failures. The first tour was conducted by the state Military Governor to all the four zones.

The second tour was conducted by all Directors and head of Parastatals of Kano state government ministries and Parastatals respectively, while the third tour was conducted by the Chief of Army Staff and Chairman joint Chiefs of Staff, the Military Governor, the flour Millers Association, Commissioners of Agriculture from wheat growing areas and media executives.

As far as the official circles are concerned, the wheat programme has been a tremendous success, both in terms of increasing areas under wheat cultivation and annual yields. The favourable tariff measure (import ban) and devaluation however, remains crucial to the success of the programme.

But the basic question still remains unanswered. That is to say, whether the present level of production and technology can indeed close the huge import gap of the late 1970s and early 1980s, given the favourable macroeconomic policy measures.

3.4 Conclusion

We have seen in this chapter, that the agricultural crisis in Nigeria that was particularly heightened at the post-civil war oil boom era led in part, to the articulation of SAP in 1986. The major impact of SAP on Nigerian agriculture is the provision of conducive macroeconomic policy measures geared towards boosting domestic production of agricultural commodities. This provides the base for launching the AWPP.

Though there has been tremendous increase in domestic wheat production under the AWPP, but the level of production and technology, is still far from achieving the import level of the late 1970s and early 1980s. In the next chapter, we will examine the facts in regard to the mechanism of the AWPP in order to see the extent to which the project has or has not been successful. The major arguments of this work as earlier pointed out are that local wheat growing cannot match the huge import level of the late 1970s and early 1980s and hence, incapable of satisfying domestic demand and that the cost of domestic wheat growing is more than that of importation.

3.5 Bibliography

Akinyosoye, V.O. (1990). 'Wheat Production: Policy and Economics of Production'. Proceedings of Nigerian Institute of Social and Economic Research/Friedrick Ebert Foundation of West Germany organised National Symposium on Prospects for Wheat Self-Sufficiency in Nigeria, July 29th - August 1st, Ibadan: NISER.

Ayodele, A.S. (etal) (1988). Reflating a Depressed Nigerian Economy. A.B.U. Social Sciences Monograph Series No. 1 Economics Department, Ahmadu Bello University, Zaria.

Babangida I.B. (1987). 'Address to the Nation on Various National Issues (26/06/86)'. Philips A.O. and Ndekwu E.C. (eds) Structural Adjustment Programme in a Developing Economy: The Case of Nigeria. Ibadan: NISER.

Dugurawa, M.S. (eds) (1989). Colonel Idris Garba's One Year in Kano State. Ministry of Information and Culture, Kano.

Economic Update: Nigerian Journal of Contemporary Public Policy Issues. Vol. 1 No. 1 January 1987. Economics Department, Ahmadu Bello University, Zaria.

(FRN) (1986) Federal Republic of Nigeria. Structural Adjustment Programme for Nigeria. (July 1986 - June 1988). Federal Government Printer, Lagos.

Husain, I. (1987). Perspectives on the Nigerian Economy Lagos: Nigerian Institute of International Affairs (NIIA).

Kano State of Nigeria: (1988). Budget of the Government of Kano State. Economic Planning Division, Military Governor's Office, Kano.

_____ (1989). "Ministry of Agriculture and Rural Development 1989 Fiscal year/Annual Report".

_____ (1990a) Budget of the Government of Kano State. Budget and Economic Planning Directorate, Military Governor's Office, Kano

_____ (1990b) First National Rolling Plan, 1990-92. Budget and Economic Planning Directorate, Military Governor's Office, Kano.

_____ (1990c) From 1985-1990. Ministry of Information and Culture, Kano.

_____ (1991). Budget of the Government of Kano State. Budget and Economic Planning Directorate, Ministry of Finance and Economic Planning, Kano.

Mousa-Booth M, (eds) (1988). Kano State: The Making of the Wheat Basket. A star success story of Kano State Accelerated Wheat Production Programme, Ministry of Information and Culture, Kano.

Nwoko, S.G. (1988). 'Agricultural Component of SAP and Effect on Agricultural Sector'. Proceedings of National Workshop on SAP in Nigeria, Jos: Kuru April, 25th-26th.

(Lagos)
The Nigerian Economist/(1989) Vol. 2 No. 9 January 17 - 30

Toyo, E. (1986). 'Food and Hunger in a Petroleum Neocolony: A study of the Food Crisis in Nigeria.' Lawrence, P. (eds) World Recession and the Food Crisis in Africa. London: James Curry.

Usoro E.J. (1987) 'Development of the Nigerian Agricultural Sector within the Framework of the Structural Adjustment Programme'. Philips, A.O. and Ndekwu, E.C. (eds). Structural Adjustment Programme in a Developing Economy: The Case of Nigeria. Ibadan: Nigerian Institute of Social and Economic Research.

CHAPTER FOUR

4. PROBLEMS OF WHEAT PRODUCTION IN NIGERIA

4.1 Introduction:

This chapter discusses some of the major problems associated with wheat production in Kano State (under the Accelerated Wheat Production Programme) and Nigeria in general, by analysing the information derived from both the farmers, Hadejia-Jama'are River Basin Development Authority (HJRBDA) and the flour millers. This provides us with a basis for testing our hypothesis as to whether large scale wheat production can sustain or has indeed sustained the huge import level of the late 1970s and the early 1980s, and whether Nigeria indeed enjoys comparative advantage in local wheat growing or not.

4.2 Domestic Wheat Growing Problems: The Farmer's Case

Although peasant wheat production dates back several hundred years, and has been found to be feasible in the semi arid savannah zones of Nigeria, certain factors have persistently limited its production, some of which are discussed below:

i) High Cost of Production: The high cost of wheat production is mostly attributed to high cost of inputs which are mostly imported: combine harvesters, tractors etc. Even though most of the farm machineries used by the wheat farmers were through government hiring system, but their high cost has manifested in increasing cost of

hiring them. Getting the farm machineries are also very difficult due to their relative scarcity (Yayock and Misari, 1990:17).

To clearly depict the situation, one Nuhu Musa Bunkure interviewed in his small 1.5 acre farm at K/Yamma in Bunkure local government area of Kano State (a town on the Kano River Project), said that they experienced a lot of problems in getting the combines, sometimes spending days. Mallam Nuhu claims only the rich who can bribe the operators were able to get the combines.

The cost of production is not at the level of farm machinery alone. Although the government of Kano State provided fertilisers at 25 percent subsidy (N20 per 50 kg bag), farmers found difficulty in getting them. I have found in the course of this work that the chain of input distribution extends from the State Ministry of Agriculture to zonal offices of Kano Agricultural and Rural Development Authority (KNARDA) and warehouses down to the village heads at the wards.

The problem faced by the farmers is that subsidised inputs were mostly hard to come by, as some unscrupulous marketing agents have engaged in the business of selling fertilisers to farmers at a higher price (as much as N60 per bag). Peasant farmers get fertilisers in a form of allocation.

Another aspect of high cost of production has to do with the cost of land on rent (aro) in the wheat irrigation areas. The significant aspect of this issue is that, though about 60 percent of the 113 farmers sampled around the Kano River area (Bunkure Local Government) own their land through inheritance,

their farm size were mostly small, averaging less than 2.5 acres. The remaining percentage were mostly businessmen, civil servants and traders, who started wheat farming in anticipation of high returns due to the macroeconomic incentives provided by the government under the SAP. Most of the peasant farmers hire part of their inherited land to the civil servants, businessmen, etc. who cultivate larger areas. This enables the peasant farmers to raise money and cultivate a small 0.5 - 2 acres land.

The average cost of rented land (goron-gona) was found to be as much as ₦400-₦500 per acre, while land preparation charges, ranged between ₦250-₦400 per acre. Similarly, labour cost has increased tremendously from ₦10 per day before 1986 to around ₦15 per day between 1986-88 and ₦15 to ₦30 per day in 1989/90 wheat farming season. This, has however, tremendously increased rural employment and income, as the traditional dry season migration (cin rani) is now history in the wheat producing areas.

Similarly, water charges introduced (in consonance with privatisation and commercialisation policy of SAP) in 1986 at ₦40 per hectare per season, increased to ₦80 in 1987, ₦200 in 1988 and ₦500 in 1988/89. The Hadejia Jama'are River Basin Development Authority (HJRBDA) which is the agency in charge of water resource management in the area under study, experienced difficulty in getting the money from the farmers. Sometimes their officials had to stay on a particular defaulter's farm at the time of harvest so as to force him to settle

the water bill either in cash or in kind. This high cost of production is reflected in high producer price (1989), averaging ₦4,500 per tonne (for Kano State ₦4,100 per tonne).

ii) Climatic Conditions: Climatic conditions has been identified as one of the major problems militating against wheat production and expansion southwards of Nigeria. Wheat can only be grown on the Northern part of Nigeria between latitudes 10^{o}-14^{o}N, and to a limited extent on the higher altitudes such as the Jos Plateau and the Mambilla Plateau (Yayock and Misari, 1990:8).

Wheat can only be grown during the harmattan period when night temperatures are low for adequate tillering and grain development. Wheat production requires cool and moisture whether during crop growth and warm, dry whether during grain formation, which is most common in most parts of the semi-arid Sudan zones of Nigeria during the November-April period.

Since higher temperatures reduce potential yield, it is very dangerous for the emergence of high temperatures during wheat growing period. This might be the reason why farmers in the wheat producing zones of Kano State were usually found to be engaged in prayers during Muslim congregational prayers and at Friday (Juma'at) mosques for continued and sustained cool whether during wheat crop growth period.

Farmers were also found to experience problems of late planting due to poor co-ordination of the wheat programme under the AWPP, i.e. untimely availability of inputs, late land preparation etc. Farmers also experience problem of late harvesting due to shortage of harvesting equipments like combine harvesters, threshers, etc. thereby compelling them to cultivate their produce manually. Out of the 133 farmers sampled, 90 were found to be using manual labour for harvesting their produce, 30 use combines while 10 use threshers.

The combined effect of late harvesting (late planting, inadequate farm machinery etc), meant that wheat might not be ready for harvesting around April, thereby clashing with the rainy season. Late planting which is caused in part, by unpredictability of climatic condition, led to the high probability of tremendous amount of loss by the farmers due to late harvesting of wheat, most especially towards the beginning of the rainy season.

The clashing of wheat harvesting with the beginning of rainy season brings about two major problems. Firstly, for the large and medium scale farmer, the combine harvesters will not be able to work well on the farm because of the wet soil. Even if it works, it will be at the risk of huge losses. Secondly, manual and thresher system of harvesting is tedious and requires a lot of labour with increasing cost even more than that of the combines hiring.

iii) Indaequate Credit Supply: In the development of any meaningful venture, credit supply from financial institutions is very crucial to its success. Credit supply institutions like the Nigerian Agricultural and Co-operative Bank (NACB), Agricultural Credit Guarantee Scheme (ACGS), and Supervisory roles of the Central Bank of Nigeria were supposed to enhance in channelling credit to the agricultural sector.

Nigeria's experience on credit supply to agricultural sector has however shown that the rural farmer does not have access to the credit facilities. The major beneficiaries were urban dwellers who engage in other businesses. Ineffective supervision and sometimes collaboration between the Bank's officials and loan beneficiaries leads to diversion of the loans away from agriculture to other more preferred sectors. This had negative consequences on agricultural expansion, wheat production inclusive.

In a sample of wheat farmers around Bunkure local Government area of Kano State, only 6 out of the 168 farmers sampled have access to an agricultural loan to finance their wheat production, as shown below:-

Table 4.1 Source of Finance for Wheat Production in Bunkure Local Government Area (On the Kano River Project Phase I).

Source	Number	Percentage
Agricultural loan	6	3.6
Local Money lenders	28	16.7
Private Savings	102	60.7
Hiring part of land	32	19.0
Total	168	100.0

Source: Field Work.

iv) Smuggling: The incidence of sumuggling has assumed a very serious threat to the expansion of wheat production in Nigeria (Adesimi, 1990:8). The high rate of smuggling has got to do with the incapability of local supply of wheat to satisfy demand. The flour mills, which were said to be operating at less than 5 percent of installed capacity, therefore became unable to stafisfy the demand of bakers for flour. This, coupled with high cost of local wheat and wheat flour, made smuggling activities very profitable.

Wheat flour is smuggled into Nigeria from Togo, Benin, Cameroun and Niger Republics, both by land and sea. Smugglers from Ogogoro village, mostly went to Apapa wharf third extention and come back with load of imported flour like Etoile De France and Famine De Froment in their canoes for onward selling inside Lagos. Similar incidences occurs at the Seme-Badagry river estuary also in Lagos. Despite the import ban, Nigeria was said to have imported about 2.1 million tons of wheat, broken down as 350,000,300,000, 250,000, 200,000 and 1,000,000 respectively in July 1990-June 1991, July 1989 - June 1990, July 1988 - June 1989, July 1987 - June 1988 and 1986/87. (USDA, 1991).

The problem of smuggling and other associated problems of post-import ban AWPP therefore calls into question Nigeria's ability to satisfy its local demand despite the huge subsidy to the tune of N290 million to wheat growing states in 1989 (Philips, 1990). This might be seen as complementing the planned assistance of wheat producing states to produce 2.09 million tonnes, over the first National Rolling Plan Period, 1990-92 (FRN, 1990:75)

4.3 Comparative Cost Analysis on Wheat Production in Nigeria Under the AWPP Using the Domestic Resource Cost (DRC) Criterion

This analysis on wheat production under the AWPP is based on estimating the relative comparative advantage of domestic wheat production under the AWPP using the Domestic Resource Cost (DRC) Criterion. The attempt here is to evaluate the relative efficiency of domestic wheat production in Nigeria relative to dependence on imports to satisfy demand.

The impact of macroeconomic incentives on efficiency can be analysed by the use of either the 'effective protection rate' (EPR) or 'domestic resource cost of foreign exchange' (DRC). The concept of value added at world prices (VAWP) is used by both measures as an efficiency criterion. The VAWP is defined as the world price of a product minus the cost of tradable inputs, also valued at their world (or "border") prices. Both the EPR and DRC measures show the impact of protection on VAWP (Steel, 1987:258).

The EPR measures 'the percentage differential of domestic value added over VAWP that is permitted by the structure of protection (including quantitative restrictions as well as tariff duties and other taxes)', while the DRC 'measures the ratio of the economic cost of the resources actually used in an activity to the net value of foreign exchange saved or earned in that activity' (Steel, Op.Cit).

An economic activity (agricultural or industrial) is competitive at economic prices if the economic value of its output exceeds the opportunity costs of the inputs involved in its production. In a situation where 'the full time pro-

file of inputs and outputs is known and a suitable time discount rate is applied to costs and benefits occuring at different points in time, the net present value of any project (actual or proposed) at economic prices provides the correct measure of its net contribution to economic welfare' (Steel, Op. Cit). An economic activity with positive net present value therefore implies economic efficiency while an economic activity with a negative net present value implies economic inefficiency.

Due to inavailability of data that can adapt well into the present value criterion, a single-period efficiency measure is employed based on the annual economic profitability of an economic activity:

$$B_j = P_j - \sum_i^n a_{ij}P_i - \sum_s^m f_{sj}P_s$$

where:

B_j = unit economic profit.

P_j = Economic price per unit of output

$\sum_i^n a_{ij}P_i$ = Economic value of intermediate inputs

$\sum_s^m f_{sj}P_s$ = Economic value of factor inputs

P_j, P_i and P_s = Shadow prices of output, material inputs and factor inputs respectively used in the production of j.

a_{ij} and f_{sj} = Number of units of material inputs and factors of production respectively, required per unit of output.

In the case of tradable commodities, the shadow price is given as the world ("border price") - free on board (f.o.b.) for exportables and cost insurance, freight (c.i.f.) for importables. An economic activity is considered efficient 'if the economic value of the output is at least as great as the economic value of the intermediate and factor inputs required to produce it ($B_j > 0$)' (Steel, Op. Cit.:259).

The application of DRC criterion to this work (out of the two major economic efficiency measures), therefore become relevant in view of the need to ascertain the relative efficiency of domestic wheat production in Nigeria under the AWPP in relation to imports dependence. It seeks to ascertain whether the nation can gain more by producing other crops where it enjoys comparative advantage. Secondly, a debate is presently going on in Nigeria as to whether the costs the government incurred (including the cost of purchasing farm machinery and subsidised inputs), can be better utilised by producing other crops at lesser costs. The impact of smuggling of wheat into Nigeria (see chapter 4.2) is argued to be a positive function of high local production cost. We shall therefore examine Nigeria's comparative advantage or disadvantage in domestic wheat production under the AWPP using the DRC criterion.

The DRC criterion is defined as the measure that is concerned with relative efficiency of producing a commodity (wheat for example) locally compared with reliance on imports. It therefore attempts here to examine the existence or non-existence of comparative advantage in the local production

of wheat under the AWPP. The DRC therefore 'measures the ratio of economic cost of the resources actually used in an activity to the net value of foreign exchange saved or earned in that activity' (Steel Op. Cit: 258). The economic cost of domestic resources used in creating a unit of value-added in the production of a commodity (wheat in our case) divided by the VAWP is therefore the DRC; it is measured using the following formula:

$$DRC_j = \frac{\sum_s^m f_{sj} P_s}{P_j - \sum_i^n a_{ij} P_i} = \frac{\text{Economic value of primary factors}}{\text{value-added at world prices.}}$$

where:

$\sum_s^n f_{sj} P_s$ = Economic value of factor inputs

P_j = Economic price per unit of output

$\sum_i^n a_{ij} P_i$ = Economic value of intermediate inputs

$P_j - \sum_i^n a_{ij} P_i$ = Value added at world prices

If the DRC ratio exceeds one, then the opportunity cost of domestic factors (in terms of foreign exchange) exceeds the addition to value added at world prices and hence, turning the net benefit criterion negative. There will therefore be non-existence of comparative advantage in domestic wheat production.

The DRC indicator can also be re-written as the ratio of domestic resource costs in terms of local currency to value added at world prices in terms of foreign currency. There is however no difference in substance between the measure used here and the previous one which 'expresses the opportunity cost of domestic factors in terms of border prices, and compares the resulting ratio with one (or with the ratio of the estimated shadow exchange rate to the official exchange rate)' (Steel, Op. Cit. 259).

If the DRC is less than or equal to one, then domestic production may be seen as efficient because domestic resources used, produce as much or more value added at world prices as they would in the activities which they are drawn. There will therefore be existence of comparative advantage in local wheat production here. Production activities with DRCs greater than one are therefore described as inefficient because resources used here could be more productively utilised elsewhere in other sectors of the economy (Steel, OP. Cit.: 260).

Nigeria's comparative advantage in the production of wheat can be seen when the expenditure on domestic resources in terms of international prices is less than the domestic cost per unit of foreign exchange required to import, i.e. the DRC. Similarly, if the cost of locally produced wheat in terms of foreign exchange is greater than the cost of importing it, i.e. the DRC, Nigeria does not enjoy comparative advantage in local wheat production.

Comparative advantage in local wheat production therefore exist when economic opportunity cost of producing it is less than its border price. Nigeria could be said to enjoy comparative advantage if local wheat production has a positive unit economic profit or negative DRCs. Again, the smaller the DRC of wheat production, the greater the scope for efficient expansion in production. Some care should however be taken in interpreting the static DRC ratios as a measure of comparative advantage. Though it provides base for export expansion or efficient import substitution (in case of wheat), the picture may however change with time and hence, with increased output expansion (Steely Op. Cit).

4.3.1. Source of Data

This analysis on wheat production in Nigeria under the AWPP using the DRC criterion, is based on wheat farm budget supplied by the Hadejia-Jama'are River Basin Development Authority (HJRBDA). The budget is based on total expenditure by the farmers in the production of a hectare of wheat on the Kano River Project. This includes:

a) Land lease;
b) Land preparation;
c) Water charges;
d) Planting;
e) Fertiliser;
f) Irrigation;
g) Weed control;
h) Pest control;
i) Harvesting; plus
j) 10 percent of total cost for contingency.

Market input prices were taken into consideration as against the prevalent subsidies, which were mostly not available to the farmers. The production cost estimate is based on two different production technologies - the Improved Irrigated Manual Technology (IIMT) and the Improved Mechanised Irrigated Technology (IMIT)

Under the IIMT, all farm operations from land preparation to harvesting is manual and farm size is small. Improved seeds are mostly used and seed dressing chemicals are also used but not up to recommended levels. Small hand tools like hoes and matchets are used, in addition to manually operated implements like sprayers and irrigation pumps (Akinyosoye, 1990:8).

Under the IMIT, farm holdings are mostly large. It is mostly practiced by public agencies like Kano Agricultural and Rural Development Authority (KNARDA) and some big time farmers. Farm size usually run into hundreds of hectares and all farm operations from land preparation to harvesting, and also threshing, winnowing and bagging are mechanised. Improved seeds are used here at recommended levels.

The major production problems associated with the two technologies are that, while IMIT is more preferrable as it saves cost and time, inaccessibility to the farm machineries and inputs forces farmers to resort to IIMT method. The smallness of farm sizes under the IIMT also made it very difficult for agencies concerned with hiring the farm machinery to adequately satisfy all the farmers, in addition to the fact that the operators of the machineries have to be

bribed before one gets them. In addition, big time farmers, who mostly fall into the category of IMIT system, have better access to inputs and extension workers.

Table 4.2 Production Cost Estimate (Budget) for Wheat in Naira per Hectare under the IIMT, Kadawa, Kano State.

1. Land Lease	₦1,000:00
2. Land Preparation	
3. Double Harrowing	₦ 125:00
2.2 Dike	₦ 125:00
2.3 Basin Levelling	₦ 112:50
Sub-Total	₦ 362:50
3. Water Charges	₦ 500:00
4. Planting	
4.1 Cost of Seeds	₦1,000.00
4.2 Seed Dressing	₦ 25:00
4.3 Broadcasting of seed	₦ 80.00
Sub-Total	₦1,105:00
5. Fertiliser	
5.1 Cost of Fertilisers	₦ 376.00
5.2 Cost of application	₦ 60.00
Sub-Total	₦ 436:00
6. Irrigation	
6.1 First Irrigation	₦ 75.00
6.2 Subsequent irrigations	₦ 500.00
Sub-Total	₦ 575.00
7. Weed Control (hand pulling)	₦ 60.00
8. Pest control	
8.1 Cost of chemicals	₦ 120.00
8.2 Cost of application	₦ 100.00
Sub-Total	₦ 220 :00

9.	Harvesting (Manual)	
9.1	Cutting and beating	₦1,250:00
9.2	Cost of winnowing	₦ 125.00
9.3	Cost of Poly-bags (sacks)	₦ 125.00
9.4	Sewing of bags	₦ 14.50
	Sub-Total	₦1,514.50
10.	Summary of Expenditure	
10.1	Land lease	₦1,000.00
10.2	Land preparation	₦ 362.50
10.3	Water charges	₦ 500.00
10.4	Seeding (planting)	₦1,105.00
10.5	Fertilisation	₦ 436.00
10.6	Irrigation	₦ 575.00
10.7	Weed control	₦ 60.00
10.8	Pest control	₦ 220.00
10.9	Harvesting	₦1,514.50
	Sub-Total	₦5,773.00
11.	Total production cost (plus 10% contingency)	₦6,350.30
12.	Expected Yield/output	2.5 metric tonnes/ hectare
13.	Value of output @ ₦4,500/m.t.	₦11,250.00
14.	Expected return/profit margin	₦11,250 - ₦6,350:30 = ₦4,899:70

Source: Hadejia-Jama'are River Basin Development Authority, Headquarters, Kano, November 21st, 1990.

Table 4.3 Production Cost Estimate (budget) for Wheat in Naira per Hectare under the IMIT, Kadawa Kano State

1.	Land Lease	₦1,000.00
2.	Land Preparation	
2.1	Double Harrowing	₦ 125.00
2.2	Dike	₦ 112.50
2.3	Basin levelling	₦ 112.50
	Sub-Total	₦ 362.50
3.	Water charges	₦ 500.00
4.	Planting	
4.1	Cost of seeds	₦1,000.00
4.2	Seed dressing	₦ 25.00
4.3	Broadcasting of seed	₦ 80.00
	Sub-Total	₦1,105.00
5.	Fertiliser	
5.1	Cost of Fertilisers	₦ 376.00
5.2	Cost of Application	₦ 60.00
	Sub-Total	₦ 436.00
6.	Irrigation	
6.1	First Irrigation	₦ 75.00
6.2	Subsequent Irrigations	₦ 500.00
	Sub-Total	₦ 575.00
7.	Weed Control (hand pulling)	₦ 60.00
8.	Pest Control	
8.1	Cost of chemicals	₦ 120.00
8.2	Cost of application	₦ 100.00
	Sub-Total	₦ 220.00

9.	Harvesting(mechanised)	
9.1	Cost of combine harvester hiring	₦ 500.00
9.2	Cost of poly-bags (sacks)	₦ 125.00
9.3	Sewing of bags	₦ 14.50
	Sub-Total	₦ 639.50
10.	Summary of Expenditure	
10.1	Land lease	₦1,000.00
10.2	Land preparation	₦ 362.50
10.3	Water charges	₦ 500.00
10.4	Seeding (planting)	₦1,105.00
10.5	Fertilisation	₦ 436.00
10.6	Irrigation	₦ 575.00
10.7	Weed control	₦ 220.00
10.8	Pest control	₦ 639.50
10.9	Total	₦4,838.00
11.	Total Production Cost (plus 10% contingency)	₦5,321.80
12.	Expected yield/output = 2.5 metric tonnes/hectare	
13.	Value of output @ ₦4,500/m.t.	₦11,250.00
14.	Expected return/profit margin	₦11,250.00 - ₦5,321.80
	=	₦5,928.20

Source: Hadejia-Jama'are, River Basin Development Authority, Headquarters, Kano, November 21st 1990.

The results of our analysis shows that under both technologies, improved seeds like fertiliser and other agrochemicals were used at the same required levels. The same level of output is also assumed for both technologies (2.5 metric tonnes per hectare). The only difference here is that while under the IIMT, manual harvesting is used,combine harvesting is used under the IMIT. It should however be

noted that, though the use of combine harvesters saves cost, but the difficulty associated with getting them made most wheat farmers to resort to manual harvesting.

The landing cost of imported wheat is assumed here to be $162 per tonne, in view of our latest available average wheat price supplied by the World Bank (Akinyosoye, 1990: 17). The shadow exchange rate is assumed at $1 = ₦10.

Given our farm budgets, the result of the DRC under the two technologies are:

i) For IIMT

$$DRC = \frac{6350.3}{1620} = 3.9$$

ii) for IMIT

$$DRC = \frac{5321.8}{1620} = 3.3$$

From the foregoing analysis, we have found that under both technologies, DRC is greater than unity and therefore implying that local wheat production under the AWPP is economically unprofitable to the nation, and that Nigeria has no comparative advantage producing it. In fact the economy stands to gain by diverting the resources available for wheat production to other areas where the nation enjoys comparative advantage. Domestic production is actually sustained through huge government protection against imports. The tariff policy which banned wheat importation is therefore argued to be a positive function of increased domestic wheat production under the AWPP, rather than any comparative advantage position. As earlier shown however, this result may

change with passage of time, coupled with increased production expansion at minimum cost.

4.4 Low Yields in Nigerian Wheat Production

The rationale for large-scale irrigation schemes in Nigeria has been based on large-scale wheat production (and also rice). In fact, international agencies like the World Bank, FAO, USAID etc, put forward favourable feasibility studies in this regard (Andrae and Beckman, 1985). The FAO particularly saw 'wheat irrigation' as alternative to wheat imports.

Wheat (along with rice), has been introduced as the key crop of the large-scale irrigation schemes (Bakolori, South Chad and the Kano River). Unfavourable natural conditions (high temperatures particularly), insufficient irrigation water, unwillingness of farmers to adopt wheat en masse as a dry season crop has unfortunately undermined large-scale wheat production (Dike, 1990).

Presently, the large-scale irrigation schemes contribute less than 3 percent of Nigeria's wheat demand (1,678.7 million metric tonnes in 1985). Wheat is a temperate crop, requiring cool climate for grain-filling and warm weather for ripening. Wheat also requires a lot of moisture for grain formation (Dike, Op. Cit). Climatic condition however limits wheat production in Nigeria to the harmattan months.

Even within the existing irrigation schemes, water resource management were found to be inefficient. Inefficient irrigation systems has been identified as the major cause of soil salinity and water logging thereby holding back yields. Adequate soil analysis is therefore needed before planting so as to determine soil suitability and soil deficiency.

Another problem of large-scale irrigation schemes in Nigeria which affect yield, is that of timely and adequate provision of water. This problem was found to be very endemic in the Kano State wheat producing areas. The town of Bunkure (on the Kano River project) in 1989 for example, experienced water problem due to dam breakage. It was therefore very common at that time for farmers to spend a whole night watering their wheat due to fear of closing the water channels, which might itself be caused by technical problems beyond the control of the officials in charge of water resource management in the area (HJRBDA).

Though the large-scale nature of the irrigation dams and the high cost associated with wheat farming tended to favour large-scale farming (who can take advantage of economies of scale), low wheat yield seem to be common for both categories of farmers. Table 4.4 below shows that 97 of the 159 farmers get less than 2 tonnes per hectare, while only 7 get over 2.5 tonnes per hectare. The ideal wheat yield per hectare according to HJRBDA is however 2.5 tonnes.

Table 4.4: Estimated wheat Yield Per hectare in Bunkure Local Government (on the Kano River Project Phase I)

Yield/hectare	Number	Percentage share
Less than 2 tonnes	97	61%
2 tonnes	37	23%
2.5 tonnes	19	12%
Over 2.5 tonnes	7	4%
Total	159	100%

Source: Field work

This low yield and associated causes of low yield have got to do with the fact that most of the wheat farmers are small-scaled, cultivating less than 2.5 to 2.5 acres (table 4.5). This exacerbates the problem of poor co-ordination of the irrigation system, which is too big for the management and control of the small-scale farmer.

Table 4.5: Estimated Number of Areas under Wheat Cultivation in Bunkure Local Government (on the Kano River Project Phase I)

Number of Areas	Number of farmers
Less than 2.5 to about 2.5 acres	92
5 acres	40
Less than 12.4 acres	12
More than 12.4 acres	4
Total	148

Source: Field work

The data above however do not suggest that wheat farming is only done by small holder farmers (i.e. those cultivating 12.4 acres or less). In fact there are big time farmers: civil servants and businessmen who are mostly absentee farmers. One can see Alhaji Ala Agege for example, who cultivates about 300 acres and Abdu Kirare who cultivates about 200 acres. Around Kadawa area, there are ex-civil servants like Alhaji Shehu Shanono (former Kano State Commissioner for Agriculture in the second Republic) who owns a 50-acre farm.

Another significant cause of low yield in Nigerian wheat production is the problem of late planting. This also has a lot to do with the agrarian formation. Farmers were required to immediately at the end of the rainy season prepare for wheat production (around mid-November). This implies a lot of problems. Firstly, the farmers will have to sell off their rainy season produce to enable them face the challenges of wheat production.

Secondly, there is a conflict between the cropping schedules of the peasants for the traditional rainy season crops (Sorghum and Millet) on the one hand, and the requirement of wheat production. Sorghum (dawa) is the major staple of the peasant population of the Sudanic belt where the large-scale irrigation schemes are located. For wheat to be produced on time (mid-November), an alternative grain (maize) must be produced during the rainy season in the area. This is because unlike Sorghum (which is mostly harvested around December-January), maize is harvested around October-November, which suits the time of wheat planting at the beginning of dry season. Wheat yield can be adversely affected by failure to

irrigate at critical stages of crop development (Yayock and Misari, 1990:16).

Peasants however, prefer to grow Sorghum, which tends to conflict with wheat production, as wheat must be planted around Mid-November to maximise yield. It must be pointed out here therefore, that though wheat has been produced in small quantities in the fadamas of the Sudanic belt for centuries, it still remains an exotic crop to most farmers. Wheat production contradicts the 'food security' drive of the Nigerian peasant farmers.

Late planting, which causes low yield is itself partly caused also by the refusal of the HJRBDA officials to release water on time due to the present politics of who is more important in the wheat programme (AWPP), between them (HJRBDA) who control water and KNARDA and KASCO who supply inputs and farm machineries.

4.5 Can Domestic Wheat Growing Satisfy Local Demand? - The Flour Millers' Case

As earlier discussed, the flour milling industry draw its backward linkage to continued wheat importation prior to the import ban. The industry in essence, was sustained through huge importation of wheat, mostly from the United States. The basic question here is whether the installed capacity of the 22 flour mills in Nigeria (about 2.5 million tonnes per annum) can now be able to be sustained by the locally produced wheat. Even if the potentials for producing such level of wheat is there, whether given comparative advantage, one will begin to think of suggesting that Nigeria should forget about it.

The Flour Mill in Kano, began to face serious problem of under capacity utilisation as from the beginning of the import ban and the pursuit of large-scale wheat production under the SAP. The Northern Nigeria Flour mill in Kano, was earlier reported not to have patronised domestically produced wheat around the Kano River Project because of its relative high cost compared to imported one (Abdulkadir, 1988:116). This of course has got a lot to do with the rate of naira exchange. The Mill in fact, secured only 1,000 tonnes from Chad Basin in 1976. The cost of a tonne of wheat that the flour mill purchased for milling into flour ranged between ₦4400 - ₦4650 per tonne, while it is around ₦5,100 in the Southern Nigerian Mills.

The NNFM official also explained that, even if they want to buy the local wheat so as to operate at near capacity level, the wheat is simply not available to satisfy their demand. They therefore argued that, while AWPP helps in boosting wheat production, but local production cannot in the meantime sustain full capacity utilisation installed at the mills. Due to shortage of imported wheat for example, the NNFM in Kano, like most other flour mills in Nigeria, is presently operating at less than 1 percent of installed capacity. In effect, they are virtually idle, as the table below shows:-

Table 4.6 Production Level of Northern Nigerian Flour Mills Over the years

Year	Production level
1984	Full production (1,400 metric tonnes/ day)
1985	"
1986	"
1987	One-third of full production *
1988	less than one percent
1989	"
1990 (June)	"

Source: Northern Nigeria Flour Mill, Kano August, 13th 1990

Note (*) Production level in 1987 was made possible through the use of remaining reserve of imported wheat.

The NNFM therefore, like many other flour mills in Nigeria, do not share the government's view that the AWPPs can be able to produce enough wheat for the country given adequate incentives, as the programme has been characterised with dishonesty as regards fund appropriation, lack of necessary infrastructure for total wheat production and unsuitability of the quality of wheat so far being grown for baking purposes (bread). The alleged poor quality of bread made from local wheat according to NNFM has manifested in the persistent non-lifting of finished products of local wheat at the mills.

The flour mills therefore want to see a situation where 75 percent of wheat consumed in Nigeria is imported while at the same time consolidating the relative gains achieved under the AWPP. Gradual reduction in imports should be made until Nigeria is able to develop through research, adapted varieties to suit Nigerian purposes, as well as establishing

enough infrastructure for enhanced large-scale wheat production. To realise this objective, it will take ten years, they argued.

The flour mills therefore argued that contrary to figures provided by the wheat producing states showing significant increase in wheat production, they are yet to see the impact at their mills. The 1989 wheat output estimates by the wheat producing states for example, was 600,000 tonnes, while that of the flour mills was 140,000 tonnes and Central Bank of Nigeria estimate was 257,000 tonnes (Philips, 1990). The major problem here is the gap between what the government said the farmers have produced and what the flour millers think the farmers have produced, given what they get from the market. This raises problem of inadequate information in the agricultural market system.

The flour millers case can be studied more seriously when one looks at the fact that most of the wheat farmers, being small-scale farmers, sell their produce immediately after harvest at the local markets, to enable them buy other things for domestic use and prepare for incoming rainy season farming. Only 17.1 percent of the 175 sample of farmers around Bunkure area on the Kano river project scheme have warehouses to store their wheat, 14.3 percent have local granery (rumbu), while 68.6 percent do not have storage at all.

It has been the continued official argument of government and scholars, that substitute for wheat should be sourced in grains that can be produced with less vulnerability to

natural conditions. Maize, millet and sorghum was suggested here. It has been argued that wheat imports has blocked the chance of either large-scale domestic wheat growing or adequate substitute for the wheat in maize, millet, sorghum etc.

Backward integration within the Nigerian domestic economy at the flour mills has taken the form of owning farms and other investments. The NNFM Kano for example, own a 10,300 hectares maize farm at Kaboji (Niger State) and another 5,000 hectare maize farm at Duguri (Bauchi State). The flour mills of Nigeria, Lagos supplies its own bags from production of a sister company, Bagco, which now supplies most of the bags requirements of the mills in Nigeria and agricultural sector needs generally.

The NNFM now mill maize and sorghum and produces maize grits, maize semovita, maize flour etc. Maize products sell well and the market has adjusted to given conditions.

From our foregoing discussions (chapter 1.1) we have established that overvaluation of local currency and state policy on large-scale importation of wheat has tended to dampen prices of local wheat thereby serving as a disincentive to local production. It has also been argued that wheat importation was sustained by the then booming economy, and that the import ban was imposed not as a result of any serious macroeconomic policy measure, but due to the fiscal crisis of the state.

Bread, which used to be the staple of significant percentage of urban residents is now becoming history, with the continuing increase in the price of domestic wheat and flour. The official price of a tonne of flour leaving the flour mill at Kano for example, was ₦5,180.00. This is reflected in increasing price of bread and hence, its reduced consumption.

4.6 Conclusion

We have seen in this chapter that the AWPP in Kano State, indeed in Nigeria as a whole is faced with problems that stands to block any chance of achieving the objective of self-sufficiency.

The problems derived, are both natural and structural. Wheat production is being argued to have blocked the chance of sourcing its alternatives in other grains that are more adaptive to soil and natural conditions, while at the same time providing avenue for channeling huge government resources into subsidised inputs that mostly ended up in the hands of middlemen.

Though huge amount of resources has been expended under the AWPP, it is still far from achieving the production target of satisfying local demand. By even taking the production level given by wheat producing states as true picture of actual production level, the gap with the import level of the late 1970s and early 1980s is still far from being closed. The production system (mostly labour-intensive and small-scaled) and total hectarages under wheat culti-

vation was found to be inadequate to sustain the huge import level like that of the late 1970s and early 1980s. The flour milling industry, an industry that was dubiously allowed to expand without integrating backwards, constitute the most important cause of huge wheat import of the early 1980s. The industry which had hitherto provided the raw material to bakeries for mostly urban breakfast in bread, is now virtually idle.

Using the DRC analysis, we have found that Nigeria does not even have comparative advantage in local production of wheat. In fact the country stands to even save cost by importing, because a positive DRC implies that the cost of local production is more than that of importation. Though this might be seen as a negation of government self-sufficiency objective, with adequate plan however, the picture might turn in the country's favour.

Though SAP policies have indeed helped in boosting wheat production under the AWPP, it cannot however boost wheat output to the huge import level of the late 1970s and early 1980s, at least in the short and medium term due to production and technological constraints.

4.7 Bibliography

Abdulkadir, B.I. (1988) "Small-scale Industries in the Development Process: A Case study of Bakeries in Kano State". Unpublished M.Sc. Thesis, Economics Department Bayero University, Kano.

Adesimi, A.A. (1990). 'The Role of Government in Wheat Production'. Proceedings of the Nigerian Institute of Social and Economic Research/Friedrick Ebert foundation of West Germany organised National Symposium on Prospects for Wheat Self-Sufficiency in Nigeria: Ibadan: NISER July 29th August 1st.

Akinyosoye, V.O. (1990) 'Wheat in Nigeria: Policy and Economics of Production'. Proceedings of the Nigerian Institute of Social and Economic Research/Friedrick Ebert Foundation of West Germany organised National Symposium on Prospects for Wheat Self-Sufficiency in Nigeria. Ibadan: NISER July 29th - August 1st.

Andrae and Beckman, B. 1985). 'The Wheat Trap: Bread and Under Development in Nigeria. London: Zed Books.

Dike, E. (1990). 'Problems of Large-scale Irrigation Schemes in Nigeria'. Science, Technology and Development Vol.8 No. 3 December.

Federal Republic of Nigeria (1990) First National Rolling Plan 1990-92. Vol. 1 Planning Office, Lagos: Federal Ministry of Budget and Planning.

Philips, A.O. (1990). Welcome Address to the Opening Ceremony of the National Symposium on Wheat Self-Sufficiency for Nigeria. Ibadan: NISER, July 29th - August 1st.

Steel, W.F., (1987). 'DRC and Effective Protection'. Meir, G.M. and Steel W.F. Industrial Adjustment in Sub Saharan Africa, Economic Development Institute, the World Bank.

(USADA);(1991) United State Department of Agriculture. Report on World grain situation and outlook. Washington D.C.

Yayock, J.Y and Misari, S.M. (1990). 'Wheat Production: Research and Institutional Roles in Attaining Self-Sufficiency in Nigeria'. Proceedings of Nigerian Institute of Social and Economic Research/Friedrick Ebert Foundation of West Germany Organised National Symposium on Prospects for Wheat Self-Sufficiency in Nigeria. Ibadan: NISER, July 29th - August 1st.

CHAPTER FIVE

5 GENERAL CONCLUSION

5.1 SUMMARY OF RESEARCH FINDINGS

By way of summary, we have seen over the past four chapters that post-independence agricultural crisis in Nigeria has been characterised with policies that tended to be biased against the sector, thereby encouraging massive rural-urban migration. In the 1960s, Nigeria was relatively self sufficient in food production, and agriculture contributes significant percentage of the nation's Gross Domestic Product and foreign exchange earnings in terms of export of cash crops. Wheat importation was then confined to very modest amount (including flour itself), as its consumption was not then entrenched into the urban diet economy.

The post-civil war oil boom era however, dramatically changed the tune of events in the Nigerian political economy. The oil boom provided the government with the means to massively invest in the development of large-scale mechanised agriculture, like the development of large-scale irrigation dams which was designed to serve as a means towards dry season farming especially in the semi-arid zones of Nigeria, that were increasingly faced with threat of desert encroachment. In addition to this, the oil boom provided the means towards development of infrastructural facilities necessary to boost agricultural production in addition to huge subsidy on inputs.

But if oil boom provided the means to develope necessary infrastructure towards boosting agricultural production, it has aggravated other problems in the Nigerian rural economy. The increasing value of the naira in relation to other currencies made imports cheaper relative to local production and with oil money at hand, the government simply continued to import to feed a population that was then increasingly becoming used to imported cereals (maize, rice, and wheat). Commerce assumed a dominant role over production and rural life began to be increasingly unbearable, hence, the massive rural-urban drift. Wheat consumption was entrenched in this period of import boom.

The government began to see the huge import of food (wheat inclusive) as a serious burden when revenue earnings began to decline in the early 1980s. The import bills were becoming increasingly unbearable to the government and efforts towards curtailing them needed to be urgently undertaken. Lack of political commitment however, forced the government to continue with the import even at the expense of mounting foreign debt. The government was faced with problem of feeding a vocal urban population which by itself do not produce, but must be fed because of political reasons.

Wheat consumption for example,can only be sustained through imports and this imports has led to the expansion of both flour milling and bakery industries to the level of total dependency without adequate measures towards sourcing local raw materials.

Successive governments in Nigeria therefore experienced difficulty in even curtailing food import, as it was even termed as 'essential commodity'. This however, led to the emergence of parasitic traders who made millions out of the 'essential commodity' syndrome.

The most important and perhaps bold policy measure undertaken by the Nigerian government towards boosting wheat production in Nigeria is the import ban and the package of policy measures geared towards wheat expansion under the structural adjustment programme. The tilting of price relations in favour of local production was made possible by both the import ban and other major economic reforms of the agricultural sector under the SAP; reduction of government direct involvement in agricultural production, the adoption of realistic exchange rate etc.

There is however an argument that the question of wheat should have been allowed to solve itself in the true spirit of SAP; i.e. imports should exist side by side with local production of wheat and that the market should determine the price elasticities for both the locally produced and imported ones.

The package of incentives geared towards boosting wheat production in Nigeria led to the launching of Accelerated Wheat Production Programme (AWPP) in the wheat producing states of Nigeria. These states have hitherto produced wheat on a small-scale, mostly for home consumption and for the well off and ritual purposes. They were therefore faced with the challenge of satisfying the huge local demand of the flour milling and Bakery industries. Achieving this objective will

help in sustaining the employment generation capability of these industries in general.

Though wheat production dates back several hundred years in Kano State, the challenge of large-scale wheat growing manifested itself in the launching of the AWPP. The Kano State government has spent huge amount of money on subsidised input and other supportive services geared towards wheat production in addition to the development of additional irrigation dams for wheat production, as wheat can only be grown in Nigeria during the dry season due to climatic reasons.

The AWPP has been characterised with problems ranging from technological incapability to administrative bottlenecks. These problems, like poor infrastrusture, inadequate and untimely availability of inputs, poor and inefficient communication between the farmers and those in charge of water resources management (HJRBDA), lack of finance etc. have tended to dampen the ability of local wheat production to even utilize its full potential, talkless of producing near the early 1980s import level. Though there are cases of large-scale wheat farmers, most farmers were however small-scaled, cultivating less than five acres.

The cost of domestic wheat production has also been found to be more than that of importation. Using the domestic resource cost (DRC) criterion, we have found that Nigeria does not presently enjoy comparative advantage in wheat production. A positive DRC, implies that at present production level, Nigeria could better utilise its human and material resources in the production of other crops where comparative advantage is enjoyed.

The present incapability of the local production to satisfy demand made the flour milling industry to become a victim of earlier misguided policy measure as the government shouldn't have allowed the industry to establish and entrench itself in the Nigerian food economy with absolute dependence on imports and poor groundwork for technological development capable of enhancing local wheat production at minimum cost.

The government allowed this entrenchment knowing very well that it cannot sustain the import bill for years. The present production system and technology was therefore found to be incapable of satisfying the needs of the flour milling industry.

For the government to achieve its objective of wheat self sufficiency therefore, certain fundamental policy reforms need to be urgently undertaken. This will help in consolidating the gains so far made and push the programme ahead towards self sufficiency attainment.

5.2 Suggestions towards Boosting Wheat Production in Nigeria

The present government policy on massive wheat production under the AWPP geared towards self sufficiency calls for the need to provide suggestions towards boosting its output, especially in view of the urgent need to satisfy local demand. This is based on the fact that, present level of production cannot provide the equivalent of the late 1970s and early 1980s import level and that, a high domestic cost of production more than that of importation, implies comparative disadvantage.

It should be noted as a prelude to my suggestions however, that the present low level of production vis-a-vis imports level and a positive DRC can be changed for the better with increasing efficiency in production. Our DRC result for example only holds now, and can change for the better with increased efficiency in production.

i) There is need for an increase in the role of River Basins for the nation to achieve self-sufficiency in wheat production. In consonance with SAP policy measures, the government restricted the roles of the River Basins to water resources management. But the need for increased wheat production requires the development of more small-scale irrigation dams and continued exploitation of the abundant fadama lands.

The long term strategy for boosting wheat production in Nigeria therefore lies partly in the development of additional small-scale irrigation schemes that can easily be managed by the rural farming population, as in the case of large-scale dams, farmers faced problem of closure of water on the dam canals without adequate notice which adversely affect productivity. Small and manageable dams will help in minimising the incidents of all night wheat watering.

The development of additional small-scale irrigation dams therefore brings to point the need for previous roles of River Basins which include development of underground water resources, maintenance of dams, dykes, irrigation and drainage systems among others, to be undertaken, while at the same time fully commercialising their activities so as to generate more revenue.

ii) For wheat production to achieve the self-sufficiency level, yield per unit should increase more than the present level. This suggest the need for increased technological innovation in terms of adequate varieties and proper and timely dosage of fertiliser capable of increasing yield per unit without having devastating impact on the soil. This means that the AWPP should be properly co-ordinated so that input procurement and distribution is not hijacked by unscrupulous marketing agents.

This suggest that, despite farmers' reluctance to agree with the government policy of gradual withdrawal from input distribution and marketing, it remains crucial to the long term success of the wheat programme (AWPP), as market determined price of fertiliser for example, might be lower than the present artificially high price caused by those who found in fertiliser hoarding, a lucrative business. Market determined input can also help in making inputs available to those who can afford., Even though it might be at a higher price, but it is certainly better than not having it at all. This will also put a stop to corrupt enrichment by certain government officials engaged in fertiliser procurement and distribution.

iii) There is need for proper co-ordination between the crops produced during the rainy season in the wheat producing areas, to avert problem of late planting. Late planting (which causes low yield) is partly

caused by late harvesting of rainy season crops. For wheat to grow well in Nigeria, it need to be planted around mid-november. But due to problem of late harvesting of rainy season crops, most farmers do not plant their wheat until around January.

Crops that can be harvested on time (around October) to allow for timely wheat production should therefore be encouraged in the wheat producing areas. Maize and rice are good examples. In the organised irrigated land of Kano (under the HJRBDA), rice is mostly planted in the rainy season. This suggestion therefore become relevant in the minor irrigation schemes and the fadama low lands. The idea here is for the peasant farmers around the irrigated fadama low lands to be encouraged to produce these crops, and not to be forced.

iv) There is need for adequate and efficient information on agricultural market system, as it relates to wheat production. Farmers mostly sell their produce immediately after harvest due to lack of proper storage facilities and also to enable them meet other obligations, as most of them do not have access to credit facilities, implying that what they invest in the farm is almost entirely what they have.

This therefore brings the need for the impact of the National Small Farms Credit Programme and the food market information dissemination service announced in the 1987 Federal Government budget to be properly felt at the countryside, so that farmers can hold their produce for sometime before selling. Consumers will also be in a position to forecast prices and plan their purchases

according to market conditions.

v) There is need for the government to enforce its anti-smuggling decree, which makes it an offence punishable with life imprisonment. This will help in further consolidating the relative gains made in domestic wheat production, thereby saving the nation the adverse economic impact of smuggling.

vi) To guard against continued controversy over the question of actual wheat production, local wheat quality for flour, etc, between the government and the flour millers, there is need for the establishment of a forum on wheat development, comprising researchers, flour millers, bakers and government officials. This will help in getting adequate co-ordination on the requirements of wheat and actual varieties needed for sustained production and increased yield per unit.

This forum will also provide a means for further exploring the technology of blending wheat with other grains like maize, millet and sorghum for baked products.

This forum will also through research, especially by the Institute for Agricultural Research, Ahmadu Bello University monitor and provide solutions to problems of pests especially rodents, insects and fungal diseases to the entire wheat producing states of the Nigerian Sudan.

This forum will also be charged with the responsibility of clearly defining states that will be encouraged to produce wheat so as to guard against the present situation where states want to produce wheat even at a comparative disadvantage with other crops.

vii) There is need for a proper definition of the wheat programme (AWPP) objective. If the programme is aimed at attaining self-sufficiency in wheat production, then adequate measures towards encouraging large-scale private sector investment in large-scale wheat production should be undertaken. Local wheat production can only match the huge import level like that of the late 1970s and early 1980s through large-scale farming. The present production level and technology is incapable of producing that level.

In this respect, the flour mills should be encouraged to own wheat farms, for enhanced wheat production. The governments in the wheat producing states should give them necessary assistance along this line.

But if the objective of government is simply that of increasing rural employment and income in the semi-arid wheat producing zones, then the present level of production and technology is okay, but certainly uneconomical to the entire needs of the country.

Finally, for wheat production programme (AWPP) to achieve its target level of self sufficiency in our present politico-economic formation, private sector investment in large-scale production remains crucial. Problems associated with continued government subsidy on inputs and small holder peasant based farming cannot be able to attain the government's noble

objective of self-sufficiency in wheat. It only provides avenue for dubious capital accumulation through hoarding of subsidised inputs and the relative gain of increasing rural employment and income in the semi-arid wheat zones, which is a very small area even in the case of Kano alone.

Appendix I

DEPARTMENT OF ECONOMICS,
AHMADU BELLO UNIVERSITY,
ZARIA.

ECONOMIC PROBLEMS OF WHEAT PRODUCTION IN NIGERIA.

BY

RISLANUDEEN MUHAMMAD

Introduction

This research is being undertaken to identify problems associated with the Accelerated Wheat Production Programme as part of an M.Sc Economics thesis. The information given will be purely used for academic purpose .

Please be kind enough to fill this questionnaire.

Questionnaire

Village: _____ Ward: _____

Date: _____

Introduction: Please Tick ( ) answer as appropriate.

1. What is your Name:_____

2. How old are you?

   01 15 - 25 years ☐
   02 26 - 35 years ☐
   03 35 - 50 years ☐
   04 Over 50 years ☐

3. When did you start wheat farming?

   01 Before 1986 ☐
   02 From 1986/87 ☐
   03 From 1987/88 ☐
   04 From 1988/89 ☐
   05 From 1989/90 ☐

4. What kind of farmer are you?

   01 Full-time farmer ☐
   02 Part-time farmer ☐

5. If you are a part-time farmer, what is your main occupation?

   01 Civil servant ☐
   02 Trading ☐
   03 Koranic Scholarship ☐
   04 Others (Specify) _____

6. What is your reasons for wheatcultivation?

   01 Anticipated remuneration ☐
   02 Response to import ban ☐
   03 Response to Government Campaign ☐

7. What is your total number of areas under wheat cultivation?

   01 About 2.5 acres ☐
   02 About 5 acres ☐
   03 Less than 12.4 acres ☐
   04 Others (Specify) _____

8. What is the nature of the land?

   01 Dispersed ☐
   02 In one area ☐

9. What is the nature of your land ownership?

   01 Aro (rented land) ☐
   02 Purchase ☐
   03 Inherited ☐
   04 Gift ☐
   05 Government Allocation ☐
   06 Others (specify) _____

10. If the land is an aro (rent) what is the cost per acre (gorongona)? _____

11. What is your method of land preparation?

01 Manual labour ☐
02 Government Tractor Hiring Service ☐
03 Private Tractor Hire ☐
04 Personal Tractor ☐

12. What is the cost of land preparation charges?

_____

13. What is the source of your irrigation water?

01 Dam ☐
02 Tubewell ☐
03 Borehole ☐

14. Do you experience any problem of water shortage? _____

15. What type of farm implements do you use?

01 Irrigation pump ☐
02 Syphone ☐
03 Hoe ☐
04 Plough ☐
05 Tractor ☐
06 Packaging Materials ☐
07 Spraying equipments ☐

16. What has been the trend in cost of labour per day? _____

a) Before 1986

01 Less than ₦10 per day ☐
02 ₦10 per day ☐
03 ₦15 per day ☐
04 Others (specify) _____

b) From 1986 - 1988

01 Less than ₦10 per day ☐
02 ₦10 per day ☐
03 ₦15 per day ☐
04 More than ₦15 per day (Specify) _____

c) 1989/90 Season

01 Less than ₦10 per day ☐
02 ₦10 per day ☐
03 ₦15 per day ☐
04 More than ₦15 per day (Specify) _____

17. Do you experience problems like:

01 Late planting ☐
02 Late harvesting ☐
03 Timely availability of inputs (fertiliser, tractors, combine harvesters etc). ☐
04 Others(specify) _____

18. If you have any of the problems above please explain:

_____

_____

_____

_____

19. Estimated yield per hectare

01 Less than 2 tonnes ☐
02 2 tonnes ☐
03 2.5 tonnes ☐
04 Over 2.5 tonnes ☐

20. What is your method of wheat harvesting?

01 Use of thresher ☐
02 Use of combine ☐
03 Use of manual labour ☐

21. If you are using combines, what is your source of getting them?

01 Government Hire ☐
02 Private Hire ☐
03 Personal Ownership ☐
04 Others (Specify) _____

22. If you are getting the combines on government hire, are there any problems? Please explain:

_____

_____

_____

23. How do you store your wheat?

01 Warehouse ☐
02 Granery ☐
03 No storage ☐
04 Others (Specify) _____

24. Do you experience problem of poor storage facilities? Please explain:

_____

_____

_____

_____

25. How do you finance wheat cultivation?

01 Agricultural loan ☐
02 Local money lenders ☐
03 Private savings ☐
04 Hiring part of land ☐
05 Others (specify) _____

26. Why do you produce wheat?

01 Home consumption ☐
02 For sale ☐
03 Home consumption and sale ☐
04 Others (specify) _____

27. How do you sell your wheat?

01 Local market ☐
02 Kano City ☐
03 Direct to flour mills in Kano and from other States ☐
04 Others (specify) _____

28. Do you think government withdrawal from marketing and distribution of inputs will help boost wheat production? Please explain whether you agree or not:

_____

_____

_____

_____

APPENDIX II

DEPARTMENT OF ECONOMICS,
AHMADU BELLO UNIVERSITY,
ZARIA.

ECONOMIC PROBLEMS OF WHEAT PRODUCTION IN NIGERIA.

BY

RISLANUDEEN MUHAMMAD

INTRODUCTION

This research is being undertaken to identify the extent to which Flour Mills in Nigeria have adjusted to given policy options. The information given will be purely used for academic purpose.

Please be kind enough to fill this questionnaire.

1. Do you think the import ban and policy articulations under the SAP can boost total wheat production to sustain full capacity utilisation at the Flour Mills? Please explain:

_____

_____

_____

_____

2. At what production level have you been operating over the years.

01 1984: _____

02 1985: _____

03 1986: _____

04 1987: _____

05 1988: _____

06 1989: _____

07 1990(June): _____

3. Are there cases of closure due to shortage of raw materials?

_____

4. What is the cost of a tonne of local wheat that you purchase for milling?

_____

5. What is the official price of a tonne of Flour?

_____

6. The government has over the years asked companies like the Flour Mills to integrate backwards, like the owning of farms, Do you own any farm?

Yes ☐ No ☐

7. If yes, how many hectares and at where? _____

_____

8. Besides the major working of milling wheat, do you mill other grains like maize, Sorghum (Guinea Corn) etc. Please specify:

_____

9. If yes, what do you produce? _____

_____

10. What has been the trend in the market for these Milled grains? Are they selling or not? _____

11. Briefly express your view about the import ban on wheat and the prospects of large scale wheat cultivation especially given the experience of the last four years.

_____

_____

_____

_____