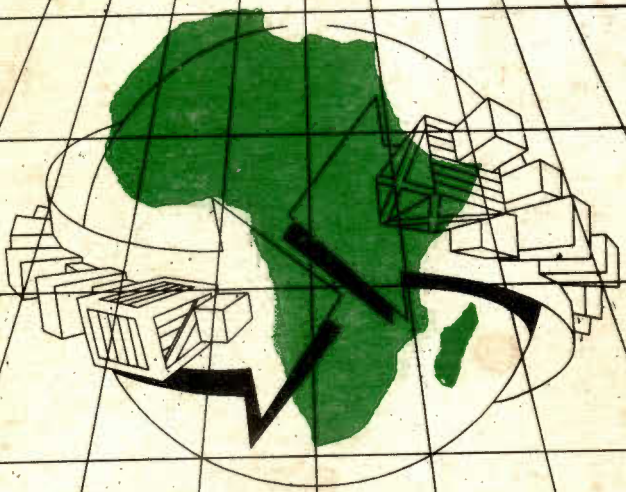
MRS. GRACE F. BLOMWAN

BEYOND ADJUSTMENT

Managment of the Nigerian Economy



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Beyond Adjustment
Management of the Nigerian Economy

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STRATEGIES FOR REVITALIZING THE EXPORT CROP SUB-SECTOR OF THE NIGERIAN AGRICULTURAL ECONOMY

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ABSTRACT

In the 1970s, the focus of the economy changed from export crops to crude oil export in Nigeria. About a decade later, oil prices collapsed worldwide and Nigeria realized that its economy had become a monoproduct one, with the attendant vulnerability to price fluctuation on world markets. The country was also import dependant for large sectors of the economy.

Government determined to carry out reforms by means of a structural adjustment programme (SAP). SAP's aim was to restructure and diversify the productive base of the economy, i.e., to reduce dependence on oil and imports, while promoting non oil exports. The export sub-sector of the agricultural sector was to be revitalized. This has failed and in the 1990s, the agricultural sub-sector contribution to total exports was less than 4 per cent, crude oil being 90 per cent.

This paper analyses some perceived constraints to sub-sector growth and offers solutions to them. An econometric approach establishes the causal relationship between SAP and agricultural export crop production. The results of the analysis show that policy measures are required to ensure a realistic exchange rate, increased credit to the sector and reduced prices for farm inputs. An enabling environment should be created, including political stability and the provision of basic infrastructures. Incentives, e.g., accessible credit schemes, should be coupled with the removal of disincentives, e.g., cumbersome export procedures and excessive export levies.

1. Introduction

BETWEEN 1960 and 1970, non-oil exports, mainly agricultural products such as palm oil, palm kernel, cocoa, cotton, coffee, rubber, groundnut, hides and skins, and timber, dominated Nigeria's total exports, accounting on average for over 80 per cent of total foreign exchange earnings. The advent of crude oil as part of the nation s exports, particularly since the early 1970s, has changed the composition

and structure of export trade. Aided by sharp rises in oil prices during the 1970s, oil export earnings have risen rapidly, accounting for over 90 per cent of total exports from 1974 to date.

The change in structure in Nigeria's export trade turned the country into an almost monoproduct export economy. Near total dependence on oil has rendered the Nigerian economy vulnerable to fluctuations in the world prices of crude oil and its products. The precipitate decline in oil prices in the early 1980s virtually halved Nigeria's export earnings. For example, only ₦7.6 billion export earnings were realized in 1983 compared to ₦14.1 billion earned in 1980 (table 1). Wide swings in export revenue have obviously had an adverse effect on the nation's economic growth and development, highlighting the need for export diversification.

A major objective of the Structural Adjustment Programme (SAP), introduced in July 1986, was to restructure and diversify the productive base of the economy in order to reduce dependence on the oil sector and on imports. Specific measures were aimed at promoting non-oil exports. Prominent among these were trade and exchange reforms and specific export stimulation incentives. However, a close examination of export data since SAP began has revealed that the structure of non-oil exports has not changed substantially from what it was just before SAP. Though the value of non-oil exports has increased and the composition of such exports has diversified (table 2), such exports still constitute less than 4 per cent of total exports, while oil exports still account for over 90 per cent (table 1).

A number of problems have been identified as constraints to the growth of non-oil exports in Nigeria. Most important is the low production of export commodities in the face of expanding domestic consumption resulting from a high population growth rate. This has been attributed mainly to the high cost of production, particularly since SAP was initiated (CBN/NISER SAP Study, 1991; Ojo et al., 1993). Other problems identified as constraining the growth of non-oil exports include: inadequate knowledge of export processes and procedures; export disincentives; declining world prices and increased protectionism among developed countries; inappropriate technology resulting in poor quality goods; and inadequate investment and investible funds.

The objective of this paper is to subject some perceived constraints to the production of agricultural commodities for export in Nigeria to empirical investigation, with a view to determining the factors influencing non-oil export production and suggest how these constraints can be dealt with. The issue was examined with the aid of an econometric model based on the theory of supply.

The paper is organized into four sections. Section 1 briefly reviews agricultural policies prior to and during SAP. Section 2 describes the methodology adopted for the study. The results of the empirical analysis are the subject of

section 3, while section 4 summarizes and concludes the paper, making policy recommendations for the future.

Table 1. Nigeria's Exports 1960-1994 (₦ million)

Year	Total Export	Oil Exports	Share of Oil Exports in total (%)	Non-Oil Exports	Share of Non-Oil Exports in Total (%)
1960	330.0	8.8	2.7	321.2	97.3
1961	346.9	23.1	6.7	323.8	93.3
1962	334.2	33.5	10.2	300.7	89.8
1963	371.5	40.4	10.9	331.1	89.1
1964	429.2	64.1	14.9	365.1	85.1
1965	536.8	136.2	25.4	400.6	74.6
1966	568.2	183.9	32.4	384.3	67.6
1967	483.6	144.8	29.9	338.8	70.1
1968	422.2	74.0	17.5	348.2	82.5
1969	636.3	261.9	41.2	374.4	58.8
1970	885.4	510.0	57.6	375.4	42.4
1971	1,290.3	950.0	73.6	340.3	26.4
1972	1,435.2	1,176.2	82.0	258.0	18.0
1973	2,277.4	1,893.5	83.1	383.9	16.9
1974	5,794.8	5,365.7	92.6	429.1	7.4
1975	4,925.5	4,563.1	92.6	362.4	7.4
1976	6,751.1	6,321.6	93.6	429.5	6.4
1977	7,976.6	7,453.6	93.4	523.0	6.6
1978	6,064.4	5,401.6	89.1	662.8	10.9
1979	10,836.8	10,166.8	93.8	670.0	6.2
1980	14,077.6	13,523.0	96.1	554.6	3.9
1981	11,023.3	10,680.5	96.9	342.8	3.1
1982	8,206.4	8,003.2	97.5	203.2	2.5
1983	7,502.5	7,201.2	96.0	301.3	4.0
1984	9,088.0	8,840.6	97.3	247.4	2.7
1985	11,720.8	11,223.7	95.8	497.1	4.2
1986	8,920.6	8,368.5	93.8	552.1	6.2
1987	30,360.6	28,208.6	92.9	2,152.0	7.1
1988	31,192.8	28,435.4	91.2	2,757.4	8.8
1989	57,971.2	55,016.8	94.9	2,954.4	5.1
1990	109,886.1	106,626.5	97.0	3,259.6	3.0
1991	121,533.7	116,856.5	96.2	4,677.2	3.8
1992	205,611.7	201,383.9	97.9	4,227.8	2.1
1993	218,801.1	213,778.8	97.7	5,022.3	2.3
1994	206,285.1	200,936.1	97.4	5,349.0	2.6

Source: a. Central Bank of Nigeria. *Annual Report and Statement of Accounts*, (1981-1994 data).
b. Extracted from Anyanwu (1995), p. 136, (1960-1980 data).

Table 2. Structure of Non-oil Exports – Value (N million)

Commodity	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	Av. (%) 1985-94
Major Agricultural Products	258.8	407.4	1,588.5	2,558.2	2,131.1	2,429.3	3,425.0	3,054.9	3,437.3	3,818.8	
Percentage of Total (%)	79.8	73.8	73.8	92.8	72.1	76.0	73.2	72.2	68.4	71.4	75.4
Manufacturers & Semi-manufacturers of Agricultural Products	65.4	54.2	61.5	152.7	409.1	396.8	644.2	498.6	578.8	524.6	
Percentage of Total (%)	20.2	9.8	2.9	5.5	13.8	12.4	13.8	11.8	11.5	9.8	11.2
Mineral Products (other than oil)	n.a.	1.3	30.2	12.2	17.1	14.9	0.6	68.4	24.9	116.7	
Percentage of Total (%)	n.a.	0.2	1.4	0.4	0.6	0.5	0.01	1.6	0.5	2.2	0.82
Manufactured Exports	n.a.	n.a.	n.a.	33.4	13.2	269.0	476.6	509.2	330.2	678.9	
Percentage of Total (%)	n.a.	n.a.	n.a.	1.2	0.4	8.4	10.2	12.0	6.6	12.7	7.4
Other Exports	n.a.	89.2	471.8	n.a.	384.0	84.6	130.8	96.7	651.1	210.0	
Percentage of Total (%)	n.a.	16.2	21.9	n.a.	13.0	2.6	2.8	2.3	13.0	3.9	9.5
Total Non-oil Exports	324.2	552.1	2,152.0	2,756.5	2,954.5	3,194.6	4,677.2	4,227.8	5,022.3	5,349.0	
Growth Rate (%)		70.3	289.8	28.1	7.18	8.1	46.4	-9.6	18.8	6.5	51.7

Source: Computed from Central Bank of Nigeria, *Annual Report* and *Statement of Accounts* (various years)

2. Agricultural Policy Framework and its Impact

Three distinct eras in agricultural policy have been identified in Nigeria from independence to date. The first era from 1960 to 1969 is referred to generally as the era of *laissez faire* as it was characterized by a minimum of direct government intervention in agriculture. The private sector, i.e., the traditional peasant and small-scale farmers, produced the bulk of food and export crops. Government support for agriculture during this period was limited to research, extension, marketing and pricing of export crops only, while the food crop sub-sector was neglected. The agricultural sector can be said to have performed creditably during this period; it was able to provide the bulk of the foreign exchange earnings of the country, while food importation was minimal.

The second era, from 1970 to 1985, was characterized by maximum government intervention in agricultural development. Many macro and micro policy measures were undertaken to move agriculture forward. Signs that the agricultural sector could no longer perform its primary roles were beginning to emerge. Emboldened by considerably increased revenue from crude oil exports, the Federal Government assumed greater responsibilities for agricultural production, input supply and marketing in addition to adopting credit control and other allocative policies in favour of agriculture. Although resources were pumped into agriculture on a massive scale, the impact on agricultural production was not commensurate with effort, as measured by the dwindling export volumes and a dramatic rise in the food import bill, while agro-industries relied on imported raw materials that could be produced locally.

The collapse of the oil market in the early 1980s brought into vivid focus the fact that the agricultural sector could not meet domestic food requirements, provide raw materials for industry or earn foreign exchange through exports; confirming the fact that Nigeria suffered from the 'Dutch Disease' (see appendix). Realizing this, the Federal Government, in the 1986 budget, proposed a programme of economic recovery to combat the various distortions in the economy. By the second half of that year, the economic recovery programme was revised into a more comprehensive Structural Adjustment Programme (SAP).

The aim of SAP was to alter and restructure the consumption and production patterns of the economy effectively to eliminate price distortions, heavy dependence on oil revenue and the importation of consumer and producer goods. In the SAP policy no sector of the economy was left out. The main strategies of SAP included the adoption of a realistic exchange policy, liberalization of the external trade and payments system and the adoption of appropriate pricing policies in all sectors, with greater reliance on market forces and a reduction in complex administrative controls. The Second-Tier Foreign Exchange Market (SFEM) was launched in September 1986, later changed to the Foreign Exchange

Market (FEM), whereby the naira exchange rate was competitively determined, except in 1994, when the government pegged the naira exchange rate at ₦22 to one U.S. dollar. The Autonomous Foreign Exchange Market was introduced in 1995 where the naira exchanged on the average at a rate of ₦85 to one U.S. dollar. However, government transactions were still carried out at the rate of ₦22 to one U.S. dollar. Interest rates were also freely determined from 1987 to 1990. In 1991 and 1994 government re-introduced regulation to check unreasonably high interest rates which were perceived to be stalling increased investment and productivity in the real sector. For this same reason, lending rates were pegged at 21 per cent in 1995.

With respect to specific agricultural sector policies, the core of the measures under SAP included institutional reforms, an improved pricing policy and specific production schemes for local staples. Prominent among the institutional reforms were the abolition of the commodity boards and the privatization of many agricultural enterprises formerly run by the public sector. Farmers were able to sell their products at both the local and international markets, unlike previously, when all export commodities were sold through the commodity boards. This marketing deregulation was supported by attractive export incentives such as a 100 per cent currency retention scheme for repatriated export proceeds to be held in foreign currency in the exporter's domiciliary accounts in Nigeria. In addition, the government introduced an agricultural policy in 1988. The policy blueprint adequately reflected the new government philosophy of minimum administrative control of economic activities and the wide scope for free market forces in the economy, a greater role for the private sector and more emphasis on economic self-sufficiency and self-reliance in Nigeria. Thus, the agricultural inputs subsidy has been substantially reduced. The agricultural sector, though still classified as a preferred sector, no longer enjoys concessionary interest rates; but higher credit ceilings have been allocated to the sector. This is dependent on the compliance of both commercial and merchant banks. In addition, initiatives were taken during SAP to increase the sector's access to credit through the establishment of specialized financial institutions such as the Nigerian Export-Import Bank (NEXIM), the Peoples Bank and the Community Banks. Special schemes and funds such as the Small and Medium Scale Enterprises (SME) Loans Scheme and the National Economic Reconstruction Fund (NERFUND) were also established, all of which accorded priority to agricultural activities.

The performance of the agricultural sector since the inception of SAP has been mixed. Although the average growth rate of agricultural production has been estimated at over 5 per cent per annum since 1988, agricultural export volumes recorded an average of 1.5 per cent decline annually during the same period. In the same vein, the volume of non-oil exports, which appears to have increased

substantially in naira terms, have actually been declining in dollar terms from a peak of US $468.8 million in 1987, the first full year of SAP, to US $158.3 million in 1993. The substantial increase in the value of exports has been traced mainly to the depreciation of the naira exchange rate. Exchange rate depreciation has also caused the prices of imported inputs such as fertilizers, chemicals and machinery to rise sharply, reducing their availability, with adverse implications for output expansion. Large-scale modern farms, depending on imported inputs for production, contracted; and output expansion since SAP can be attributed to hectarage increases by new entrants under the self-employment schemes occasioned by the contraction of the public sector. As agriculture is a residual sector, this contraction does not augur well for sustainable development.

3. Theoretical and Empirical Analysis

Taking a cue from the export-led growth' concept of the theory of external trade and development, export expansion can lead to growth by stimulating technical change and investment, or by spilling demand over into other sectors. Expansion of primary products exports led to growth in many developed economies today. Countries such as Canada, Australia, New Zealand, Sweden and Denmark are typical examples of industrialized countries which were mainly primary product exporters during the 19th century. However, the success of export-led growth depends critically on the existence of favourable foreign demand and a reliable domestic supply (Iyoha, 1995).

At the National Conference on Cocoa Trade in Nigeria held in October 1986 at Akure the most important problems that were identified as causing the downturn in cocoa production were low producer prices for cocoa and prohibitive prices of chemicals. At a similar conference organized in 1987 for Rubber and Wood Products at Benin City from 16-17 February, unfavourable produce pricing and marketing; and non availability of investment finance were among the major problems identified as militating against natural rubber production in Nigeria. As regards wood production, low productivity due to the unavailability of viable seeds, as well as the gradual shrinkage in areas allocated to forest land in the face of agricultural and industrial expansion were among the problems highlighted. Ojo (1994), in his analysis of the many problems constraining the development and growth of non-oil exports in Nigeria, started with the low level of production. He attributed the low level of production in both the agricultural and industrial sectors to high costs of production which limit the capacity of producers to procure needed inputs. He also attributed the high cost of production to high interest and exchange rates, as well as the poor state of basic infrastructures. According to him, one of the implications of a low level of production is that

there is hardly any exportable surplus, as domestic output is not enough to satisfy local consumption — in line with the theoretical point of departure of this paper.

Finally, the results of an empirical study carried out by Obadan in 1993 to ascertain the impact of SAP on Nigeria's natural rubber export supply showed that the real exchange rate is a significant determinant of rubber export supply. He also documented results which indicated that increased domestic consumption of natural rubber negatively affected export supply; but increase in total output resulted in a more than proportionate increase in export supply. He, therefore, solicited for measures to boost the total supply of rubber, such as the replanting and maintenance of plantations and a better supply of credit, planting materials and inputs, among others.

3.1 Empirical analysis

This paper was an econometric approach to establish the causal relationship between SAP and agricultural export crop production empirically, in a bid to establish the way forward in managing Nigeria's economy. Agricultural products such as cocoa beans, palm produce and rubber, and maufactured and semi-manufactured agricultural products such as cocoa products, processed skins and textiles, constituted on average about 85 per cent of non-oil export revenue between 1987 and 1994 (during SAP) (table 2).

The key issue empirically investigated concerns the effects of SAP on the supply of agricultural export commodities. It has been established that increased production will result in increased export supply (e.g., Obadan, 1993). SAP sought to stimulate increased export crop production through exchange rate re-alignment. The expectation, therefore, was that the exchange rate variable should show a positive and significant relationship with production during SAP. Effects on export crop production of other variables which this study sought to ascertain are rainfall, as agriculture is mainly rain-fed in Nigeria; interest rates and volume of credit for the agricultural sector; prices of inputs as captured by the price of fertilizer and finally the world price of agricultural export commodities (in naira). The coefficients of rainfall, volume of credit and world price of agriculture export commodities are expected to carry positive signs, while the agricultural interest rate and price of fertilizer variables are expected to have negative signs.

3.2 The model

The relationships were specified as follows:

$$Q = f(RNF, WPI, FP, TC) \quad (1)$$
$$Q = f(RNF, WPI, FP, TC\ SAP) \quad (2)$$
$$Q = f(RNF, EXR, FP, TC) \quad (3)$$
$$Q = f(RNF, EXR, FP, TC, SAP) \quad (4)$$

$$Q = f(RNF, WPI, INT, FP) \quad (5)$$
$$Q = f(RNF, WPI, INT, FP, SAP) \quad (6)$$

where:

Q	=	cash crops production index (1984 = 100)
RNF	=	average rainfall per annum (in millimetres)
WPI	=	index of average world prices (all commodities) (1985 =100)
FP	=	fertilizer price (naira per tonne)
TC	=	total credit to the agricultural sector (₦ m)
SAP	=	dummy variable for the effect of SAP policies, e.g., abolition of the commodity boards (a value of 1 for SAP years and O otherwise)
EXR	=	nominal exchange rate (₦ per $)
INT	=	agricultural lending rate (%)

Equations (1) to (6) above were estimated with annual data for the period 1970 to 1994, using the unweighted least square linear regression technique.

Furthermore, equations (1) and (3) were also estimated for the period 1970 to 1986, so as to obtain clearly the effect of SAP policies on export crop production. If the parameter estimates are significant and carry the expected signs, then the relevant inferences can be drawn.

4. Results of the Regression Analysis

Table 3 contains the linear regression equations. The R^{-2} values which measure the overall goodness-of-fit of the equations are satisfactory. All the values range between 0.643 and 0.872. The results show that the explanatory variables in each equation explain significant proportions of the variations in the dependent variable, *Q*. The overall regression equations are significant, as indicated by the F-statistics. However, the Durbin-Watson (D.W.) tests for serial correlation appear to be inconclusive in some of the equations, indicating some degree of auto-correlation.

The performance of individual variables in terms of expected signs and statistical significance was quite satisfactory as they conformed with *a priori* expectations. For example, the variable representing relative high cost of input, represented by the high price of fertilizer, has the expected negative sign; and the coefficients, which had t- statistics of -2.04 and -3.40 were significant at the 95 per cent and 99 per cent confidence level for pre and post SAP initiation periods respectively. This means that an increase in the price of fertilizer decreases export crop output. The exchange rate (*EXR*) variable carried the expected negative sign prior to SAP, as indicated in equation (8); and a positive sign for the period including SAP and was highly significant as well.

Table 3. Parameter Estimates of the Factors Affecting Export Crop Production

			Independent Variables									
Equation Nos	Depend-ent Variable	Constant	RNF	WPI	EXR	INT	FP	TC	SAP	R^2	D.W.	F
1.	Q	62.681	0.021	0.083			-0.024	0.006		0.858	0.898	30.15
		(3.19)	(1.48)	(3.12)			(-1.27)	(0.39)				
2.	Q	65.887	0.019	0.062			-0.017	0.006	8.673	0.860	0.879	23.32
		(3.15)	(1.29)	(1.32)			(-0.72)	(0.38)	(6.54)			
3.	Q	68.834	0.018		3.666		-0.056	0.008		0.868	1.086	32.79
		(3.61)	(1.30)		(3.46)		(-3.40)	(3.01)				
4.	Q	71.120	0.017		2.840		0.039	0.006	9.951	0.872	0.956	25.93
		(3.67)	(1.17)		(1.93)		(-1.46)	(1.60)	(0.82)			
5.	Q	59.887	0.020	0.052		0.889	-0.004			0.863	0.871	31.49
		(3.06)	(1.42)	(1.19)		(0.96)	(-0.27)					
6.	Q	63.410	0.018	0.026		0.942	-0.005		10.048	0.866	0.835	24.52
		(3.08)	(1.22)	(0.42)		(1.00)	(0.21)		(0.643)			
7.	Q	41.398	0.132	0.168			-0.176	0.22		0.653	1.632	5.656
		(1.46)	(1.42)	(1.47)			(-1.49)	(1.75)				
8.	Q	5.576	0.070		-11.663		-0.258	0.043		0.643	2.062	5.401
		(0.15)	(2.31)		(-1.32)		(-2.04)	(3.16)				

Note: t-statistics are in brackets below the regression coefficients.

This confirms the fact that the overvaluation of the naira could have retarded the production of export crops. Also, the dummy variable *SAP*, representing the Structural Adjustment Programme's effect on export crop production through the abolition of the Commodity Boards has a positive sign in all the equations, though it is not very significant, which means that the free marketing policy of SAP has a positive influence on the production of export crops. The volume of credit variable, *TC*, also carried the expected sign and was highly significant in the equations which represent after SAP and pre-SAP periods. The world price variable *WPI* and the rainfall variable *RNF* both carried the expected positive sign and were significant at the 99 per cent and 95 per cent confidence levels respectively. The results of the equations as fitted with the interest rate variable were not as good as those estimated with the total credit variable, since the coefficients of *INT* did not carry the expected negative sign and were not significant. This implies that the volume of credit is a better determinant of export crop production than interest rates.

In effect, the empirical results are very supportive of the hypothesis that rainfall, world price, exchange rate, cost of inputs, fertilizer price, volume of credit, and free marketing and pricing arrangements are all important determinants of export crop production.

5. Summary and Conclusion

The paper set out to investigate empirically the major determinants of increased agricultural export crop production in Nigeria. The main factors identified in the literature as those affecting export crop production, namely: the exchange rate, poor prices, high interest rates, high cost of inputs, insufficient credit and poor marketing were made the explanatory variables.

The regression results show that the exchange rate is a significant determinant of export crop supply and also confirm that before SAP the exchange rate impacted negatively on output but impacted positively during SAP. This is in consonance with the objectives of SAP.

Any increase in the price of fertilizer, a major crop production input, negatively affects export crop production. This has implications for the continued reduction of subsidy on fertilizer by government. Considering the fact that most other inputs, such as pesticides and farm equipment/implements are no longer subsidized, the hypothesis is that the high input price occasioned by the depreciation of the naira exchange rate has been confirmed by the results obtained for fertilizer, it being the only input still receiving a level of subsidy from government.

The volume of credit variable coefficient was also positive and highly significant, confirming that an increased volume of credit will result in an

increased production of export crops. That rainfall, exchange rate, fertilizer price and volume of credit co-efficients carried the correct signs prior to and during SAP and were highly significant in explaining export crop production. Equations (3) and (8) imply that these explanatory variables were well chosen.

From the foregoing, it can be seen that to stimulate increased export volumes, there is a need to remove the obstacles to increased production first, as domestic demand will have to be satisfied first before the export market, particularly as there is increasing local demand for agricultural export crops. Therefore, policy measures to ensure a realistic exchange rate, increase the volume of credit to the agricultural sector, and reduce prices of farm inputs need to be emphasized to stimulate increased production of agricultural export crops and, therefore, export volumes, in order to achieve the objective of increased non-oil export earnings.

Secondly, there is the need to create an enabling environment, which should encompass political stability as well as consistent macroeconomic and complementary sectoral policies to stimulate the private sector to invest in increased processing of agricultural commodities at qualities able to surmount the international barriers present in world markets.

Specifically, incentives such as the credit schemes of the Nigerian Export-Import Bank (NEXIM), the National Economic Reconstruction Fund (NERFUND), and the Small and Medium Scale Enterprises and Agricultural Credit Guarantee Schemes should be easily accessible to private entrepreneurs who can produce good quality export products with attractive packaging. Government, on the other hand, should intensify efforts at providing basic infrastructure in the areas of transportation, telecommunications, water and electricity to cut costs of production and enhance the profit margins of investors in the sector. Finally government, through the Nigeria Export Promotion Council, should continue to explore new export markets and products so as to expand the export base, while removing such disincentives as cumbersome export procedures and excessive export levies. These would go a long way to revitalize the export crop sub-sector of the Nigerian agricultural economy.

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