ANALYSIS OF EXPORT PERFORMANCE OF PINEAPPLE FROM NIGERIA: 1990-2006.

AGWU, N.M., NWACHUKWU, I.N AND AGWU, I.V

College of Agribusiness and Financial Management, Michael Okpara University of Agriculture, Umudike
P.M.B.7267, Umuahia, Abia state, Nigeria.
e-mail:namak71@yahoo.com or agwu.nnanna@mouau.edu.ng

ABSTRACT
This study was conducted to ascertain the pineapple export demand from Nigeria. The study amongst other things assessed the export performance of pineapple and estimated the determinants of the export demand for pineapple from Nigeria. Data for the study were obtained from the National Bureau of Statistics data base, Central Bank of Nigeria Statistical bulletins, and Food and Agriculture Organization data base of various years. The data were analyzed using export performance ratio and multiple regression. The result revealed that Nigeria showed a mixed trend in her export performance for pineapple. It further showed that Nigeria's output of pineapple and world output volumes were significant determinants of pineapple export from Nigeria at 10 percent level. The R^2 value was 0.581 while the F-ratio was 1.386.

Keywords: Pineapple, Export, Determinants and Export Performance.

INTRODUCTION

Agriculture has played prominent roles in Nigeria's economic development. Such important roles include its contribution to employment, food production, industrial inputs and foreign exchange earnings. In the 1950s and 1960s, the export crop sector of agriculture accounted for 60 – 70 percent of total exports. Nigeria was then a major exporter of cocoa, cotton, palm oil, palm kernel, groundnuts and rubber. Between 1970 – 1974, agricultural exports as percentage of total exports fell from about 43 percent to slightly over 7 percent. From the mid 1970s to the mid 1980s, the average annual growth rate of agricultural exports declined by 17 percent. By 1996, agriculture accounted for only 2 percent of exports (Daramola *et al*, 2007). In terms of foreign exchange earnings, the sector contributed an average of 5.3 percent annually between 1971 – 1985 and less than four percent from 1980- 2001 (CBN, 2002). This was as a result of neglect suffered by the agricultural sector during the hey days of the oil boom in the 1970.

According to Omonona, Oni and Akpan (2007), Nigeria experienced substantial capital inflow, largely from the oil export during much of the 1970. The high revenue from oil export coupled with the implicit taxation of agricultural export commodities by the erstwhile commodity boards and the restrictive agricultural price policies shifted the terms of trade against the agricultural sector and were responsible for the dismal performance of the agricultural export sub- sector.

The Structural Adjustment Programme (SAP) was adopted in 1986 and implemented to restructure the consumption and production patterns of the economy as well as eliminating the price distortions and heavy dependence on crude oil export and import of consumer and producer goods (Ihimodu, 1993). Under SAP, the emphasis was on diversifying Nigeria's export base away from oil and thus, increasing non-oil foreign exchange earning (Daramola, *et al*, 2007).

According to UNIDO, (1992), the Nigerian agricultural export commodities have been classified into two viz: traditional and non-traditional export crops. The prominent traditional commodity exports include cocoa, palm oil, palm kernel, rubber, cotton groundnut and kola nut, gum arabic, among others while the non-traditional include pineapple, cashew, eggs, processed fruits and alcoholic beverages, to mention but a few. These non-traditional export commodities have emerged as the most demanded products in the international market.

Pineapple is the second in importance after bananas, contributing over 20 percent of the world production of tropical fruits (Coveca, 2002). The origin of pineapple has been traced to Brazil and Paraguay in the Amazon basin where the fruit was domesticated worldwide. Production started by 1500 AD when pineapple was propagated in Europe and the tropical regions of the world. The most wide spread variety is

Cayenalisa (*Smooth Cayenne*) which was first introduced in Europe from French Guyana (Collins, 1949, 1960).

Pineapple dominates the world trade of tropical fruits, although other fruits have gained market share. Statistics from 2000 indicate that pineapple trade took 51 percent from a total of 2.1 million tones of the world fruit market with mangoes taking the second place with 21.7 percent (Covaca, 2002)Thailand, Philippines, Brazil and China are the main pineapple producers in the world, supplying nearly 50 percent of the total output (FAO, 2004). Other important producers include India, Nigeria, Kenya, Indonesia, Mexico and Costa Rica and these countries provide most of the remaining 50 percent. The introduction of SAP in 1986 came with the abolition of the commodity boards. This coupled with the consequent deregulation of price which led to the emergence of higher producer prices for export crops under the private marketing arrangement (CBN/NISER, 1992).

The policy shifted support to the growth of traditional non-oil exports which led to an appreciable increase in exports. However, this growth of non-oil exports has not been consistent (Yusuf and Yusuf, 2007). The contributions of the non-oil sector to foreign earnings remain abysmally low representing less than 1 percent between 2000 and 2004 (CBN, 2004).

The prices of Nigeria's major agricultural export commodities were generally depressed in the international commodities market, with the exception of cocoa in the 2005/2006 trading session. The decline in commodity prices has been attributed to the decline in demand and excess supply situation (Daramola *et al*, 2007). Generally, domestic producer prices of Nigeria's agricultural commodities have exhibited mixed trends in the recent past (Adubi and Okunmadewa, 1999; Okoh, 2004).
A few, non-traditional exports, such as Pineapple, have also experienced rapid growth in the last few years. In fact, FAO (2002) had noted that during the past decade, world production of pineapple has increased at a rate of 1.9 percent per year, despite the occurrence of unfavourable weather and economic situations.

However, given the changing patterns of demand, technological change, increasing mobility of capital and labour and shifts in underlying comparative advantage, there are risks failing Nigerian exports competitiveness (Mbekeanu, 2007).

Hence this study is to ascertain the demand for pineapple which is one of Nigeria's non-traditional export crops with a view to analyzing the factors that influence its demand and competitiveness globally. Specifically, the study assessed the export performance of pineapple from Nigeria between 1990-2006; estimated the determinants of the export pineapple from Nigeria; and made some policy recommendations based on the findings.

METHODOLOGY

Study Area

Nigeria is the study area. Nigeria is derived from the words "Niger" and "area". Niger is the name of the river that constitutes the most remarkable geographical feature of the country. Nigeria is located in the West African region and is geographically between Latitudes $4^0 20'$ and $14^0 00'$ North and Longitudes $3^0 20'$ and $14^0 30'$ East. The country is boardered by Cameroon on the South east, Benin on the South west and Niger on the North West and Chad on the North east (Coker, 2008). The country is made up of 36 states with Abuja as the Federal Capital Territory and 774 Local Government Areas. It is a multi-ethnic society and occupies a geographical space of 923, 768 square kilometers. The Coastline stretches across a space of over 790 kilometers while the coastal to the Northern limit is a distance of about 1,040 kilometers (NBS, 2006). It has a population of about 140, 003, 542 million persons (NPC, 2007).

The climate is semi-arid in the north and becomes increasingly humid in the south, with a mean annual temperature ranging from $28^0C - 31^0C$ in the south. Rainfall is one of the most important climatic factors influencing agriculture and three broad ecological zones are commonly distinguished viz: the northern Sudan Savannah (500 – 1000 mm).the guinea savannah zone or middle belt (1000 – 1500 mm) and the Southern rainforest zone (1500 – 4000 mm).

Generally, rainfall patterns are marked by an alternation of wet and dry seasons of varying durations. In the north, rainfall lasts from May to September with a peak in August, while in the South, rainfall is bimodal, increasing steadily from January and reaching its peak in June-July. About two-thirds of the area cropped is located in the north with the rest equally divided between the middle and southern zones (ADB, 2006).

Over 60 percent of the country's populations live in rural areas. The economy is characterized by a large rural, mostly agricultural based traditional sector and a smaller, largely urban, more capital intensive sector. The average per capita income (estimated by the World Bank in 2006) was US $300 per annum.
Although the country relies heavily on the petroleum sector which generates over 90 percent of her foreign exchange earnings; agriculture continues to play a major role in the economy. The sector currently contributes between 30 – 40 percent to the GDP, with rain fed crop production accounting for about 89.06 percent of this total and livestock, forestry and fisheries for 6.38 percent, 1.25 percent and 3.31 percent respectively. Agricultural sector also makes a contribution to exports (UNIDO, 1992).

Scope of the study
This study covered the export of pineapple which is a non-traditional agricultural export commodity in Nigeria. The study covered the period between 1990 and 2006; that is seventeen (17) years.

Method of Data Collection
The data for this study were obtained from secondary sources. Majority of the data were collected from available data and information at;
(i). The Federal Office of Statistics now called National Bureau of Statistics (NBS) data base of various years.
(ii). The Central Bank of Nigeria statistical bulletins and their statement of accounts of various issues.
(iii). Food and Agriculture Organisation (FAO) data base of various years.

Analytical procedure and model specification
Objective (i) was realized by using the Export Performance Ratio (EPR).
EPR= Snt/Swt……..(1)
Where;
Snt = share of Nigeria's total export of pineapple.
Swt = share of the world export of pineapple.
This formula has been used by Balassa (1965) and Kumar and Rai (2007).

Export performance ratio is based on observed pattern of trade flows which is also called Revealed Comparative Advantage (RCA). If EPR or RCA is greater than unity, the country has the comparative advantage in the export of the concerned commodity and vice versa. According to Laursen (1998), RCA was made symmetric by obtaining the index as (RCA – 1/RCA + 1). This index is known as Revealed Symmetric Comparative Advantage (RSCA) and varies from – 1 to + 1. Objective (ii) was achieved using regression analysis which estimated the demand function.
$Y = aQ^{b1} T^{b2} (PR)^{b3} (ER)^{b4} U$……..(2)
Where:
Y = Nigeria's export of pineapple (Mt)
Q = Nigeria's production of pineapple (Mt)
T = Volume of international trade in pineapple (Mt)
PR = Ratio of Nigeria's export price and non-Nigerian international prices of pineapple.
ER = Exchange rate (₦/US$)
a = intercept
b_{is} = elasticities of respective variables
U = Stochastic error term.
The four functional forms of linear, semi-log, double log and exponential were tried. This model has been used in the past by Shende and Bhole (1999) and Kumar and Rai (2007).

RESULTS AND DISCUSSION
Export Performance of Pineapple.
In estimating the export performance of pineapple, the export performance ratio (EPR) was employed.

Table 1 revealed that Nigeria has shown mixed trends with comparative advantage or export performance on pineapple export. The results have shown that Nigeria had comparative advantage in the export of pineapple between 1990 and 1995, having the RCA value of more than unity though the RSCA values were less than one. However, between 1996 and 2006 the RCA values were less than one and the RSCA values negative. This implies that Nigeria did not display comparative advantage within these years. This result may not come as a surprise, given the fact that during the first segment of the study period which fell within the period of the Structural Adjustment Programme (SAP), Nigeria made an appreciable improvement in her exports of agricultural produce; particularly the non-traditional export crops coupled with increased output of these products. However, the case was not the same between 1995 – 2006. Between 1995 – 1999, government attention focused mainly on political issues and transition from age-long military to civilian administration. This may have had some negative effects on the sectors. From 1999 – 2006, Nigeria; under civilian administration pursued vigorously the expansion and export of selected crops like, tree crops, cassava, yam, cocoa yam, rice, vegetable oil and sugar. These programmes were pursued under the Root and Tuber Expansion Programme, rice initiative, vegetable oil sugar cane presidential initiatives. Given this, the less than unity RCA result did not come as much surprise.

Table 1: Export Performance, Revealed Comparative Advantage and Revealed Symmetric Comparative Advantage of Pineapple.

Year	RCA	RSCA
1990	1.329	0.141
1991	1.312	0.139
1992	1.356	0.151
1993	1.181	0.083
1994	1.063	0.031
1995	1.028	0.014
1996	0.953	-0.024
1997	0.920	-0.042
1998	0.996	-0.0002
1999	0.836	-0.089
2000	0.864	-0.073
2001	0.728	-0.157
2002	0.632	-0.225
2003	0.577	-0.268
2004	0.480	-0.251
2005	0.401	-0.428
2006	0.356	-0.381

Source: Computations from data, 2009.

Determinants of Pineapple Export Demand from Nigeria

Four functional forms of regression model viz: linear, semi-log, double log and exponential were tried. However, double log form was chosen as the lead equation based on the R^2 value, F-ratio, number of significant variables and Durbin Watson (DW) value. Attention was given to DW value because data used in the analysis were time series and since OLS was used, it becomes particularly necessary to check for auto correlation. Since the DW value fell within the acceptable ranges of between 1.5 – 2.5, it is confirmed that the data were without auto correlation problems. The DW value in this case was 2.235.

From the result as shown in table 2, Nigeria's production of pineapple and the world output volume were the only variables that were positive and significant at 10 percent levels. By implication, increase in the world demand for pineapple will lead to an increase in the domestic production of pineapple. This means that for any 10 percent increase in world pineapple trade, there will be an increase in domestic output of pineapple by 29.479 percent. Price ratio in relation to the international price and domestic price as well as the exchange rate of the naira to the US dollar were not statistically significant and therefore made no impact in determining pineapple export demand from Nigeria. About 58 percent of the variability were explained in the model as shown by the R^2 value.

Table 2: Regression results of the determinants of pineapple export demand from Nigeria.

Variables	Linear	Semi-log	Double-log	Exponential
Constant	5455.621	148059.0	-327.955	-3.655
	(0.604)	(0.912)	(-0.056)	(-0.064)
Nigeria's production of pineapple	-0.006	-30860.4	29.479	1.32E – 005
	(-0.512)	(-2.162)*	(2.060)*	(0.180)
World volume of pineapple	0.000	-49.964	14.752	-2.6E – 006
	(-0.413)	(-0.046)	(2.0395)*	(-0.764)
Price ratio of world price and Nigeria's price	26.593	752.090	1.392	-0.023
	(0.535)	(0.552)	(0.224)	(-0.776)
Exchange rate	-22.995	-463.321	-2.560	0.012
	(-0.506)	(-0.335)	(-0.090)	(0.088)
R^2	0.107	0.158	0.581	0.664
F – ratio	0.358	0.514	1.386	2.474
DW	2.473	2.623	2.235	2.361

Source: Computations from data, 2009. **Note**: * denotes 10 percent level of significance.
Values in parenthesis are the t-values.

CONCLUSION AND RECOMMENDATION

In conclusion, the study had revealed that Nigeria showed mixed trends in the export performance of pineapple. While it had revealed comparative advantage (RCA) of more than one between 1990 and 1995, it was less than one between 1996 – 2006. Nigeria's pineapple output (production) and world or international trade volume were the major determinants of export demand for pineapple from Nigeria.
Exchange rate of the Nigerian currency against the United States of America dollar and the ratio of Nigeria's export price and non-Nigerian international price of pineapple were not statistically significant and therefore did not play any role in determining the export demand of pineapple from Nigeria.

Given the results of this study, it is recommended that more finances should be invested in the production of pineapple. Since Nigeria has comparative advantage in its production and export. Deliberate policies should be
initiated to increase the quantities of pineapple production and its grading in order to increase Nigeria's competitiveness in the world market. Furthermore, efforts should be made to add value to the crop before exporting. This will help attract more income given its increased demand in the international market.

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