EFFECT OF TRADE AND AGRICULTURAL POLICIES ON FISH TRADE AND PRODUCTION IN NIGERIA

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ABSTRACT

The fishery sector is important in Nigeria's development matrix. The sector not only provides employment for the citizens but also contributes more than 40% of animal protein consumed by average Nigerian. However, over the years the role of providing animal protein for the populace dwindled to the extent that fish demand outweigh fish production, which created trade imbalance. In order to reverse decline in fish production and curtail fish imports, Government of Nigeria put up agricultural and trade policies to boost fish production and move Nigeria toward self sufficiency in fish. In this study we examined if these policies have influenced fish production, import and export from 1961-2006 in Nigeria. We applied statistical and econometric techniques to relevant time series data generated from Central Bank of Nigeria Statistical Bulletin and Food and Agricultural Organisation Statistical Database. The results of the analyses indicate that SAP has significant effect on fish export, but it has not significantly increased fish production and decreased fish importation in Nigeria. The implication of these findings is that although SAP may increase fish export in Nigeria; because of price incentives associated with SAP. However, price incentives may not be enough to stimulate domestic fish production in Nigeria. The country should think of production inputs incentives as done during Pre-SAP era. The government needs to set in motion other sustainable sector specific strategies and policies in order to fully exploit the potentials of Nigeria's fishery sector. One of these sustainable strategies is the proper harnessing of aquaculture.

Keywords: Trade, Agricultural, Policies, Fish, Production

INTRODUCTION

The fishery sector is important in Nigeria's development matrix. The sector not only provides employment for the citizens but also contributes more than 40% of animal protein consumed by average Nigerian. In the livestock industry, the contribution of fish is highly significant. It generates income along its production, processing, preservation and marketing chains (Ojo *et al* 2006). According to Ojo (2007) the people living in the riverine areas depend mainly on fishing activities for their survival and contribution of their quota to the nation's socio-economic development. The contribution of fishery sub-sector to agricultural share of GDP has also been on increase from 1.4% to more than 5% in 2002 as indicated in Table 1.

Table 1: The contribution of Agricultural sub-sector to agricultural share of GDP

Year	GDP Crop	GDP Livestock	GDP Forestry	GDP Fisheries	GDP Agriculture
1981	20.0	3.4	2.1	1.4	26.9
1982	21.9	5.2	2.0	1.7	30.8

1983	22.7	6.2	2.0	2.3	38.2
1984	26.9	7.1	2.0	1.8	37.8
1985	27.6	6.8	1.9	1.0	37.3
1986	28.3	6.9	2.0	1.4	38.6
1987	29.2	5.3	1.4	0.8	36.7
1988	34.1	4.2	1.2	1.1	40.6
1989	25.4	3.6	0.9	1.4	31.3
1990	26.5	3.7	0.8	1.7	32.7
1991	24.9	3.3	0.7	1.5	30.4
1992	22.2	2.8	0.5	1.2	26.7
1993	28.3	3.6	0.5	1.1	33.5
1994	32.6	4.0	0.6	1.1	38.3
1995	26.9	3.3	0.4	1.0	31.6
1996	26.1	3.2	0.3	1.1	30.7
1997	28.5	3.4	0.4	1.3	33.6
1998	32.2	3.9	0.5	1.6	38.2
1999	29.7	4.3	0.6	1.6	35.3
2000	20.7	2.4	0.4	1.1	24.6
2001	24.0	2.8	0.5	1.3	28.6
2002	23.7	2.8	0.5	5.4	32.4

Source: Esobhawan (2007)

Fishery sub-sector continues to play an important role in the Nigerian economy to date as it contributes 4.5% of agriculture's 42% contribution to national GDP i.e. fisheries contribute 1.8% of total GDP in 2007 (NTWG, 2009). However, the demand for fish in Nigeria is far outstripped the domestic production. According to CBN (2007), the demand for fish in the country is 1.5million metric tones per annum while the domestic output is 635,200 metric tones, causing a despicable demand deficit of 864,800 metric tones per annum[1]. In fact, Nigeria imports about 560,000 tons of fish worth 400 million U.S. dollars annually, despite the available natural and human resources to supply fish for the whole of West Africa (Alabi and Chime, 2010). By 2007, fish import increased to 739,666 tons valued at USD 594 million (NTWG, 2009). This has implication not only for food security but also on balance of trade. Table 2 shows there trade

[1] This deficit, representing 58% of the total demand has been attributed to a number of factors. These include, the upsurge demand for fish due to high population growth rate (Ojo, 2007), the dietary habit of Nigerians in favour of fish which has no cultural and religious bias and the affordability of fish by the average Nigerian relative to livestock because of its cheaper price.

imbalances in fish trade in Nigeria, which has been negative over the years. Given the foreign exchange constraints, the government and policy makers are worried on they will continue to finance high fish import bills. In order to reverse decline in fish production and curtail fish imports, Government of Nigeria put up agricultural and trade policies to boost fish production and move Nigeria toward self sufficiency in fish. In this study we examined if these policies have influenced fish production, import and export from 1961-2006 in Nigeria.

The rest of the paper is divided into five sections. Following this introduction is section two which deals with structure of fishery production in Nigeria, section three reviews the agricultural and trade policies in Nigeria, section four elaborates on the methodology employed in the study, section five presents and discusses the findings from these studies, while section six concludes the study with policy recommendations.

Table 2: International Trade in Fish and Fish Product in Nigeria ($ million).

YEAR	EXPORT VALUE	IMPORT VALUE	TRADE BALANCE
1992	14.00	267.21	-253.21
1993	8.54	267.16	-258.62
1994	11.16	150.95	-139.79
1995	13.40	140.31	-126.91
1996	14.35	290.35	-276.00
1997	8.39	158.63	-150.24
1998	31.16	190.10	-158.94
1999	46.49	209.96	-163.47
2000	39.50	241.07	-201.57
2001	48.82	368.19	-319.37
2002	54.05	375.03	-320.98
2003	48.22	403.49	-355.27
TOTAL	338.08	3062.49	-2724.37

Source: Esobhawan(2007)

STRUCTURE OF FISHERY PRODUCTION IN NIGERIA

Table 3 shows that the major source of fish production in Nigeria is through artisanal fishery sector, which contributes about 80% of total fish produced in Nigeria between 2001 and 2007, while aquaculture supply about 10 to 12% during the same period. However, available evidence has shown the contribution from artisanal and industrial fish is declining due to over fishing in the country's territorial waters and the river pollution in the artisanal capture fishery communities as a result of the activities of oil prospecting companies (Ojo, 2007). Harvesting of

fish with poisonous chemicals has been implicated in the near extinction of fish stocks. NTWG (2009) has estimated that domestic fish production potential stood at 3.2 million tons so, there is considerable room for further expansion. With the offshore marine fishery already under pressure from piracy, and with pollution in estuaries and brackish waters reducing their productivity, future production increases will almost certainly have to be achieved through aquaculture and enhancement of inland fisheries. The potential to expand Nigeria's freshwater fisheries is vast, and indeed 1.7 million ha have been deemed suitable for aquaculture. To date, this potential has not been exploited (NTWG, 2009).

Table 3: Source of domestic fish production in Nigeria in metric tonnes.

YEAR	Artisanal	Industrial	Aquaculture	Total
2001	402,800 (81.44)	40,600 (8.21)	51,200 (10.35)	494,600 (100.00)
2002	405,600 (81.43)	40,900 (8.21)	51,600 (10.36)	498,100 (100.00)
2003	411,700 (81.43)	41,500 (8.21)	51,400 (10.36)	505,600 (100.00)
2004	442,000 (81.55)	44,200 (8.15)	55,800 (10.30)	542,000 (100.00)
2005	465,400 (81.12)	46,100 (8.04)	62,200 (10.84)	573,700 (100.00)
2006	483,600 (80.51)	48,800 (8.12)	68,300 (11.37)	600,700 (100.00)
2007	507,500 (79.90)	51,400 (8.09)	76,300 (12.01)	635,200 (100.00)

Source: Esobhawan(2007) Note: The figures in parentheses are the percentage contributions

AGRICULTURAL AND TRADE POLICIES REGIMES IN NIGERIA

According to Oyejide (1986), the choice of trade regime has significant implication for fish demand and supply in an economy, this is because trade and associated policies influence the structure of incentives for agriculture as compared to other sectors of an economy; trade regimes have impact on the movement of resources to agriculture to encourage or discourage fish production. To him trade and associated policies have implications for the structure of relative domestic prices, which helps to determine whether self-sufficiency in fish is possible or even desirable. In this section, we review these policy regimes in Nigeria.

In retrospect, before the current agricultural policy, four distinct agricultural policy phases can be identified in Nigeria. The first phase spanned the entire colonial period and the first post independence decade (Pre-1970), the second phase covered the period from 1970 to 1985(Pre-SAP), the third phase started from 1986 to 1994 (SAP), the fourth phase was what could be characterized as the post-SAP era, starting from 1995 - 1999, after we then have Agricultural and trade policies in this new era, which are currently in place.

The Agricultural and Trade Policies in Pre- 1970 Era (1950-1969).

In the pre-1970 era, the government philosophy of agricultural development was characterized by minimum direct government intervention in agriculture. As such, the

government's attitude to agriculture was relaxed, with the private sector and particularly the millions of small-scale traditional farmers bearing the brunt of agricultural development efforts. Government efforts were mainly supportive of activities of these farmers and largely took the form of agricultural research, extension, export crop marketing and pricing activities. Most of these activities were based on regional government with the federal government contribution confined largely to agricultural research. The low visibility of government in agricultural development efforts were borne out of a general philosophy of economic *laissez faire*. To be sure, some regional governments were bent on making their presence felt in agriculture, especially in the 1950s and 1960s, by creating development corporations and launching of Farm Settlement Schemes. But these actions found their justification more in welfare consideration than in hard economic necessities. It was however, becoming clear towards the end of the 1960s that the Nigerian agricultural economy might be running into stormy weather. The signs of emerging agricultural problems included declining export crop production and some mild food shortages. Even then most of these problems were ascribed to the civil war and such, were considered to be only transitory in nature. But events soon proved these assumptions wrong as the agricultural sector sank deeper and its problems became much more intractable than anticipated (Manyong et al, 2005). As at 1960, trade and payments controls were relatively moderate. But as from 1966, probably due to the national crisis created by the civil war of that period, foreign exchange controls and import licensing were introduced. These controls were relaxed after the civil war

The Agricultural and Trade Policies During Pre- SAP Era (1970-1985).

The turn of the 1970 was characterized by a state of general apprehension about the condition of the Nigeria agricultural sector. This led to fundamental change in the philosophy of government towards agricultural development from one of minimum government intervention to one of almost maximum intervention, particularly by federal government of Nigeria. The feeling was pervasive that the solutions to the increasingly serious problems of agriculture and especially those of food supply required the heavy clout of government in the form of multi-dimensional agricultural policies, programmes, and projects, some of them requiring the direct involvement of government in agricultural production activities. The sudden discovery of oil fortune reinforced this feeling. Hence, the decade of the 1970 and early 1980s witnessed an unprecedented deluge of agricultural policies, programmes, projects and institutions. Some of these programmes, projects and institutions are: Commodity and Marketing Board, Nigerian Agricultural and Cooperative Bank (NACB), National Accelerated Food Production Programme (NAFP), River Basin Development Authority (RBDA), Operation Feed the Nation (OFN), National Seed Supply Services (NSS), Rural Banking Scheme (RBS), Land Use Decree (LUD) and Green Revolution (GR). The most controversial of them all is Commodity and Marketing Board. Government was heavily involved in the marketing of agricultural commodities, while private traders handled domestic trade in food. The government set official guaranteed minimum prices at which government commodity board would act as buyer of last resort. But the guaranteed prices were too low to encourage production. The commodity and marketing boards were established to stabilize both prices and income of farmers. State trading enterprises were responsible for marketing 15 major crops, for example, the Nigerian Grain Board was in charge of maize, rice, sorghum and millet, while Nigerian Palm Produce was in charge of palm oil, palm kernel oil and palm kernel cake. Stabilization funds were established for protection from short-term world price fluctuations. The boards also funded research into plant breeding, improved husbandry, pest control and supplied inputs such fertilizer, insecticide and credit. They graded

produce, offering higher prices for higher grades to induce farmers to improve quality of their produce, conducted campaign against plant diseases, and provided storage facilities, transport and processing services. These functions were perverted overtime; however, stabilization funds became convenient way of taxing the sector. Farmers were paid well below world market prices.
In terms of trade policy, the oil boom of 1973-1975 created corresponding increases in imports. The government undertook the importation and sale of cheap foreign grains (particularly rice, wheat flour, vegetable oils, meat product), thereby flooding the local markets with high quality imported foods at prices which are substantially lower than the unit costs of producing their local substitutes. As a result, these domestically produced substitutes were rendered uncompetitive with the cheaper imports, and their production declined drastically. But when the rising import bills could not be sustained, a tight trade policy had to be introduced in the 1977-1978 period. Under that policy, many items were restricted. There was another period of oil boom that followed immediately. During the boom, all manner of imports were dumped on Nigeria. Toward the end of 1981, however, the oil market began to show signs of weakness. By April 1982, government had to resort to import controls once again. The problem of oil glut led to a greater dependence on import licensing as economic policy tool to control imports. In the 1983 budget, about 150 commodities were placed under specific license requirements.

The Agricultural and Trade Policies During SAP Era (1986-1994).

The failure of the state-led approach to development, Nigeria's dwindling fortune in the petroleum export market, a burgeoning debt burden and an unhealthy investment climate led to the realization that the country's economy required some drastic restructuring. This was what gave impetus to the Structural Adjustment Programme (SAP) launched in July 1986. Reforms during SAP and commitment under the Uruguay Round dominated the policy environment in agriculture since 1986. Under SAP, commodity boards were abolished and prices were liberalized. Farmers' remuneration received a further boost from depreciation of the naira. Following these reforms, farmers were receiving close to world market prices and without delays which were common during the commodity board era. Other components of the SAP had indirect effects on the sector. The exchange rate reform addressed the problem of overvalued currency. While the import cost rose, the net effect of exchange rate policy reform was positive because agricultural producers (especially small farmers) were less dependent on foreign inputs than producers in other sectors. In addition, government subsidies on fertilizer, improved seeds, herbicide, pesticide and machinery provided significant incentives (CBN/NISER, 1992). These supports were to be reduced gradually in favour of free market forces. Other measures for increasing agricultural production included monetary, credit, public expenditure and investment policies. Banks were directed to grant credit to agricultural sector at preferred interest rates. The food policy instruments during SAP were those involved in trade liberalisation, import substitution, and tariff structure adjustment designed to encourage local production and protect local industries from undue international competition and dumping.

The Agricultural and Trade Policies in Post-SAP Era (1995 to 1999).

The agricultural policies during Post- SAP era retained essentially some important aspects of the agricultural policies of SAP period. For example, the abolition of commodity boards, liberalisation of prices and devaluation of Naira continued during the post SAP period. The other components of agricultural policies in the post SAP era are: Review of government fertilizer programme, so that private individuals were allowed to trade in fertilizer; introduction of comprehensive system of sanitary and phyto-sanitary inspection and introduction of pre-shipment inspection. The food import policy objectives since 1986 when structural adjustment

commenced have not change significantly. The main focus of trade policies is on measures to regulate import trade through such measures as tariffs, import quotas and prohibition (Ogunkola and Bankole, 2000). The details of the past agricultural policies in Nigeria before the new agricultural policy were summarized in Garba (2000); Ogunkola (2003) and Manyong et al (2005).

The Agricultural Trade Policies in the New Era (2001 to Date).

The previous agricultural policy documents were finalized in 1988 and were supposed to remain operative until the year 2000. Hence, in 2001, a new policy document was launched (FMARD, 2001). The new policy document bears most of the features of the old one, but has more focused direction and better articulation.

The key features of the new policy are as follows:

- Evolution of strategies that will ensure self-sufficiency and improvement in the level of technical and economic efficiency in food production. This is to be achieved through (i) the introduction and adoption of improved seeds and seed stock, (ii) adoption of improved husbandry and appropriate machinery and equipment, (iii) efficient utilization of resources, (iv) encouragement of ecological specialization, and (v) recognition of the roles and potentials of small-scale farmers as the major producers of food in the country.
- Reduction of risks and uncertainties in agriculture to be achieved through the introduction of a more comprehensive agricultural insurance scheme to reduce the natural hazard factor militating against agricultural production and security of investment.
- A nationwide, unified, and all-inclusive extension delivery system under the ADPs.
- Active promotion of agro-allied industry to strengthen the linkage effect of agriculture on the economy.
- Provision of such facilities and incentives as rural infrastructure, rural banking, primary health care, cottage industries etc, to encourage agricultural and rural development and attract youths (including school leavers) to go back to the land.

The fact that the new agricultural policy is more focused is evident in the specific treatment it gives to each aspect of food sector. For example the specific policy on food products are spelt out in Manyong et al (2005).

Nigeria's trade policy is currently relatively liberalized. However, agricultural sector remains highly protected with an average applied MFN tariff rate of 41.4% up from 26.7% in 1998 (WTO, 2005). The most protected food products subject to tariff of 100% include butter, cheese and curd, edible vegetables and certain roots and tubers, edible fruits and nuts, vegetable oil, margarine, prepared or preserved meat products, sugar confectionery, food preparations containing chocolate, pasta, pastry and rice. Tariff on maize is 25%. The average applied MFN tariff on fish imports is 23.7%, crustacean attract a tariff rate of 25%. In addition, import prohibition have been placed on wheat flour ,sorghum, live or dead birds, frozen poultry and poultry products, cassava and cassava products and fruit juice in retail packs, pork and pork products, beef and beef products, mutton, lamb and goat meats. All these show that tariffs and non-tariff measures are being used vigorously to control food imports in Nigeria (Ogunkola and Bankole, 2000).

METHODOLOGY

This study was carried out in Nigeria. Nigeria lies between $4^{0}16^{1}$ and $13^{0}53^{1}$ North Latitude and between $2^{0}40^{1}$ and $14^{0}41^{1}$ East Longitude. It is located in the West Africa bordered on the West by the Republic of Benin, on the north by the Republic of Niger and on the east by the Republic of Cameroon. To the South, Nigeria is bordered by approximately 800 kilometers

of the Atlantic Ocean, stretching from Badagry in the west to the Rio del Rey in the east. The country also occupies a land area of 923,768 kilometers and the vegetation ranges from mangrove forest on the coast to desert in the far north. The climate of Nigeria is largely tropical, characterized by high temperatures, high humidity and intense heat. The rainfall ranges from 3500 to 2000 mm. Topographic effects create local rainfall patterns in high altitude areas of Jos Plateau, Mambilla Plateau, and the Adamawa Mountains where rainfall varies between 1016 and 2000 mm. The country has abundant water and land resources that can support all the fishery activities (NTWG, 2009).

Data used for this study are essentially secondary in nature. The range of the data is between 1961 and 2006; they were derived principally from Food and Agricultural Organisation (FAO) Statistical Databases and supplemented with data from National Bureau of Statistics (NBS) publications and Central Bank of Nigeria (CBN) publications. The information related to domestic fish production, fish import and export were derived from FAO; other relevant data were derived from NBS and CBN.

We applied Analysis of Variance (ANOVA) and Vector Error Correction (VEC) model to establish the effect of agricultural and trade policy on fish production, import and export in Nigeria. We used the ANOVA to test whether per capita mean fish production, import and export during different policy regimes are significantly different from each others[2].

The VEC can be stated as:

$$\Delta FP_t = \beta_0 + \sum_{j=1}^{p} \beta_{1j} \Delta FP_{it-j} + \sum_{j=1}^{p} \beta_{2j} \Delta FI_{it-j} + \sum_{j=1}^{p} \beta_{3j} \Delta FE_{it-j} + \sum_{j=1}^{2} \delta_j D_{it-j} + \Delta \eta_i \quad (1)$$

$$\Delta FI_t = a_0 + \sum_{j=1}^{p} a_{1j} \Delta FI_{it-j} + \sum_{j=1}^{p} a_{2j} \Delta FP_{it-j} + \sum_{j=1}^{p} a_{3j} \Delta FE_{it-j} + \sum_{j=1}^{2} \delta_j D_{it-j} + \Delta \zeta_i \quad (2)$$

$$\Delta FE_t = \beta_0 + \sum_{j=1}^{p} c_{1j} \Delta FE_{it-j} + \sum_{j=1}^{p} c_{2j} \Delta FP_{it-j} + \sum_{j=1}^{p} c_{3j} \Delta_j FE_{it-j} + \sum_{j=1}^{2} \delta_j D_{it-j} + \Delta \epsilon_i \quad (3)$$

Where, *FP, FI* and *FE* are domestic fish production, fish import and export respectively, *D* is a dummy variable for policy regimes, where 1 is for SAP period and zero otherwise and as, βs, Cs and δ are parameters to be estimated.

RESULTS AND DISCUSSIONS

Table 4 shows that the highest fish production took place during Pre-SAP era in Nigeria. While about 67kg of fish per capita was produced during Pre-SAP era, the per capita fish production was reduced to about 61kg during Pre-SAP era, and per capita fish production continues to decline since then. This suggests that SAP policies and programmes were not able to stimulate increase fish production and hence may not ensure fish self-sufficiency in Nigeria. However, the fact that the per capita fish produced during Pre-SAP is higher than per capita fish

[2] The null hypothesis tested by one-way ANOVA is that two or more population means are equal. The question is whether (H_0) the population means may equal for all groups and that the observed differences in sample means are due to random sampling variation, or (H_a) the observed differences between sample means are due to actual differences in the population means.

produced during other regimes implies that the policy of input supports during Pre-SAP might have induced increased fish production. This is important because fish per capita that was achieved during the Pre-SAP regime has not been achieved since after then.

Table 4: Average fish production during different policy regimes in Nigeria (kg)

Period	Average Production	Per Capita Production
1961-1969(Pre-1970)	2699664	52.73
1970-1985(Pre-SAP)	3958767	67.20
1986 -1994(SAP)	5254284	61.06
1995-2006 (Post-SAP)	6415969	59.85
F- Value	32.14*	

Source: Authors' Calculations

*Significant at 5% level

It is indicated in Table 5 that 0.07kg of fish per capita was imported during Pre-1970, which is the smallest when compared with other policy regimes. Pre-1970 era in Nigeria has been categorized as regime when Nigeria was almost self sufficient in food production (Ekpo, 1986). However, as a result of inflow of petro dollars coupled with increased population, the demand for fish increased significantly in Nigeria after Pre-1970(without commensurable increased production). The per capita fish import was highest during Pre SAP era (3.9kg) which declined to 2.11kg and has continues to decline henceforth.

Table 5: Average fish importation during different policy regimes in Nigeria (kg)

Period	Average Importation	Per Capita Importation
1961-1969(Pre-1970)	14585	0.07
1970-1985(Pre-SAP)	225398.10	3.90
1986 -1994(SAP)	176061.10	2.11
1995-2006(Post-SAP)	159678.71	1.49
F- Value	2.16*	

Source: Authors' Calculations

*Significant at 5% level

Table 6 reveals per capita fish export started to increase significantly during the Structural Adjustment Programme (SAP) and has continued to increase since then. The per capita fish export continues to increase during Post-SAP period because SAP period retained essentially the liberalization and devaluation policies of SAP era. The fact that SAP[3] may increase fish export in Nigeria can be attributed to the fact that farmers received higher prices for their product during SAP as a result of currency devaluation that is associated with SAP. The other aspect of SAP is the encouragement of some fish products that were not exportable before were included in the fish export list such as shrimps and crabs, which increases the numbers of fish commodities that were being exported during the SAP period. The high trend in fish export during SAP was sustained even after post SAP era.

The estimates from Vector Error correction model indicates that Policy (SAP) has significant and positive effect on fish export but it has non- significant effect on fish production and import in Nigeria. The fact that the error correction is -0.9422 and significant implies that a there is 94% chance that fish export will return to equilibrium from temporary shock. The significant effect of SAP on fish export has been attributed to price incentives and the inclusion of non-traditional export fish among the fish export list during the SAP and thereafter (Kwanashie et al, 1998).

[3] This can also be said of Post- SAP because it retained essentially all the attributes of SAP.

Table 6: Average fish export during different policy regimes in Nigeria (kg)

Period	Average Export	Per Capita Export
1961-1969 (Pre-1970)	11853.33	0.27
1970-1985 (Pre-SAP)	19271.94	0.37
1986 -1994 (SAP)	37074.75	0.75
1995-2005 (Post-SAP)	160251.86	1.50
F- Value	140.91	

Source: Authors' Calculations
*Significant at 5% level

Table 7: VEC estimates of effect of Agricultural and Trade Policies on Fish production, Import and Export

	ΔExport	ΔImport	ΔProduction
ΔExport(lagged 1 year)	0.1421	68.1890	6.7683
t-ratio	0.7921	0.7145	0.2563
ΔImport(lagged 1 year)	0.0003	-0.1454	0.0392
t-ratio	0.9146	-0.7566	0.7370
ΔProduction(lagged 1 year)	-0.0027	1.2306	-0.1120
t-ratio	-1.8015	1.5390	-0.5063
Dummy (Policy)	439.6503	79784.51	6552.14
t-ratio	3.2765*	1.1172	0.3316
Constant	-103.6130	-27223.93	11618.98
t-ratio	1.5890	-0.7845	1.2010
Error Correction	-0.9422	-166.62	-24.5871
t-ratio	-4.3669*	-1.4510	-0.7738
R-Squared	0.5400	0.2222	0.0628
Adjusted R Squared	0.4400	0.0532	-0.1410
F-Statistic	5.4003*	1.3147	0.3081

Source: Authors' Calculations
*Significant at 5% level

CONCLUSION AND RECOMMENDATIONS

It can be concluded that SAP has significant effect on fish export, but it has not significantly increased fish production and decreased fish importation in Nigeria. The implication of these findings is that although SAP may increase fish export in Nigeria; because of price incentives associated with SAP. However, price incentives may not be enough to stimulate domestic fish production in Nigeria. The country should think of production inputs incentives as done during Pre-SAP era. The government needs to set in motion other sustainable sector specific strategies and policies in order to fully exploit the potentials of Nigeria's fishery sector. One of these sustainable strategies is the proper harnessing of aquaculture.

REFERENCES

Alabi R.A and C.C. Chime (2010): Impact of Food Production on Food Import in Nigeria. Final Research Report Submitted to African Economic Research Consortium (AERC), Kenya.

C.B.N. (2004): Self-Sufficiency in the Fishery Subsector: challenges and Prospects in Lagos State. Departmental Research Paper, Research and Statistics Department, Central Bank of

Nigeria, Abuja Pp 1- 3. Ekpo, A.H. (1986): Food import dependency in Nigeria. *Journal of Economic and Social Studies* 3(4): 27-34.

Esobhawan, A.O. (2007): Efficiency Analysis of Artisanal Fishery Production in Edo State, Nigeria. P.hd. Dissertation of Department of Agricultural Economics and Extension, Ambrose Alli University, Ekpoma, Edo State Nigeria.

Garba, P.K (2000): Analysis of the implementation and stability of Nigerian agricultural policies (1970-1993). *AERC Research Paper 101,* Nairobi, Kenya.

FAO (2003): World agriculture towards 2015/2030. An FAO Perspective. Food and Agriculture Organization, Italy, Rome.

Kwashies(1989) http://www.aercafrica.org/DOCUMENTS/RP78.PDF

Mayong, V.M, Ikpi, A. Olayemi, J.K, Yusuf, S.A. Omonona, R and F.S Idachaba (2005): Agriculture in Nigeria: Identifying opportunities for increased commercialization and investment. A commissioned Study by IITA, U.I and USAID

NTWG (2009): Agriculture and food security. Report of Vision 2020 National Technical Working Group. Abuja, Nigeria.

Ogunkola, E.O and A. S Bankole (2000): The new round of trade negotiations: Opportunities and challenges. Paper presented at AERC/ALF National Workshop on WTO at Abuja Sheraton Hotels and Towers, July 21-22, 2000.

Ojo, S.O. (2007): Improving Efficiency in food Crop Production for Food Security in Nigeria. *Medwell Agricultural Journal* 2(1): 9-15.

Ojo, S.O., Fagbenro, O.A. and O.O Fapohunda (2006): Productivity and Technical Efficiency of Aquaculture Production in Nigeria: A Stochastic Frontier Production Function Approach. *Journal of World Aquaculture* Vol. 37(3), 18 – 23

Oyejide, T. A (1986): The effect of trade and exchange rate policies on Agriculture in Nigeria. IFPRI Research Report No.55. Washington, D.C

WTO (2005): *Trade Policy Review Nigeria*, 2005. Bernand Associates/WTO publications, Geneva, Switzerland.

WTO (1998): *Trade Policy Review Nigeria*, 1995. Bernand Associates/WTO publications, Geneva, Switzerland.