

Impact of Trade on Domestic Rice Production and the challenge of Self-sufficiency in Nigeria

Chuma Ezedinma (Ph.D)

**International Institute of Tropical Agriculture
P.M.B 5320, Ibadan, Nigeria**

Abstract

Nigeria is currently the largest rice importer in the world. Hitherto, Indonesia had until 2004 been the worlds largest importer of rice. Today Indonesia has with a sense of patriotism surpassed all odds to become self sufficient in the commodity. Nigeria still imports rice to the tune of 1.8 million dollars alone in 2002. The annual demand for rice in the country is estimated at 5 million tons, while domestic production is 3 million resulting in a deficit of 2 million tons.

Between 2001 and 2003 a survey was conducted to ascertain the impact of imported rice on domestic production in Nigeria. Data was collected from the following states located geographically in the north: Adamawa, Jigawa, Kaduna, Kano, Katsina, Niger, Taraba and Zamfara States. Information was also collected from the following states in the south: Abia, Akwa Ibom, Anambra, Benue, Cross River, Ebonyi, Enugu, Imo, Kogi, Kwara, Nasarawa, Ogun, Ondo, and Osun States. Data was collected at two levels namely from the small rice processing plants and the urban destination markets. Statistical techniques were utilised in data analysis. A spatial equilibrium model was adapted for data obtained in southern Nigeria to account for spatially separated economic units between the rice producing and consuming urban (demand) cities.

Results indicate that the market for domestic rice have been shrinking due to rice imports leading to low capacity utilisation at the small local rice mills and the migration of the active farm population away from the farms to seek alternative employment in the cities. The proportion of ocal rice available in Nigerian markets is far less than that of imported rice and there has been a rise in intra regional trade for local rice supplies. The sourcing of paddy rice especially by small millers such as the Abakiliki rice mills has moved away from the locality to other rice producing states like Benue, Nasarawa, Gombe and Taraba. The marginal costs of such non-optimal sources of supply increases with increase in transport costs. Results also show that improving the standards of local rice is feasible and desirable, but it may not be competitive for local rice mills unless production costs are reduced significantly at the farm level. Since urban Nigerians have developed a tremendous taste for good quality rice they will continue to measure the quality and competitiveness of domestic rice by the current standard and quality found in imported rice. To attain self-sufficiency in rice production a major challenge lies in improving the quality and competitiveness of domestic rice output in Nigeria.

Introduction

Nigeria is the largest rice producing country in the West African region. Rice production rose gradually over the years with area expansion to surpass major rice producing countries like Cote d Ivoire and Sierra Leone. The principal factors driving increased rice production in Nigeria is population growth and urbanisation. In 2002, Nigeria accounted for nearly 44 % of the total rice output and 57 % of the total rice producing area in West Africa (WARDA 1996). Rice yields are however low even by West African standards.

Paradoxically Nigeria is also the largest importer of rice in the world. The annual demand for rice in the country is estimated at 5 million tons, while production level is 3 million tons of milled rice resulting in a deficit of 2 million tons. Over the years the country had resorted to imports to bridge this deficit. For instance in 1999, the value of rice imports was US\$259 million and this increased to US\$655 million in 2001 and US\$756 in 2002. Between 1990 and 2002, Nigeria imported 5,132,616 tons of rice valued at US\$1,883,553 million. In 2002 alone, the country imported 1.882 million tons of rice (FAO 2002).

The objective of this paper is to describe the effect of rice trade (imports) on domestic (rice) production and marketing, assess the competitiveness of domestic rice relative to imported rice and the effect of policy inconsistency on rice production and determine the optimal efficiency of local rice mills in Nigeria.

Methodology

Information for this study was obtained from primary and secondary sources. The secondary sources comprise information obtained from the International Institute of Tropical Agriculture (IITA) library, websites and other libraries. Primary sources of information were obtained from a field survey of several states in Nigeria. Primary data was obtained from the following states: Abia, Akwa Ibom, Anambra, Adamawa, Benue, Cross River, Ebonyi, Enugu, Imo, Jigawa, Kaduna Kano, Katsina, Kogi, Kwara, Niger, Ogun, Ondo, Osun, Taraba and Zamfara States.

Primary data was collected in three stages. The first stage involved the enumeration of small rice processing mills. In each surveyed state, the total number of processing plants in the area was counted. The capacity of each plant and year of purchase were noted in each location. The sources and distance of rice paddy were recorded. The destinations of milled rice (ie the urban towns and cities) were also recorded.

In the second stage of data collection 10 percent of the total number of processing plants were sampled. Questionnaires were used to collect relevant information from the owner/operators of the processing plants. The final stage of the study involved a survey of selected rice markets in the urban centres in Nigeria to ascertain the proportion of local and foreign rice in these markets. In each state, the major urban (wholesale) market was selected and after enumeration of rice traders in the market, 10% of the traders were interviewed with questionnaires.

Statistical techniques were utilised in data analysis. Means and frequencies were used to present information in tables and figures. A spatial equilibrium model (von Oppen

and Scott 1993) was adapted for the study. The model was applied to data from southeast Nigeria to account for the interaction of the spatially separated economic units between the rice producing and rice consuming urban (demand) cities. The major supply zones in eastern Nigeria were Abakiliki, Afikpo, Adani, Omor, Ogoja, and Bende. A linear programming transportation model was used to determine the optimal supply of rice between processing plants and each market location. The objective function is to minimize total transport cost. The model was formulated as follows:

$$\text{Minimize } Z = \sum \sum c_{ij} x_{ij} \quad (1)$$

$$\text{Subject to: } \sum x_{ij} \leq a_j \quad (2)$$

$$\sum x_{ij} \geq b_j \quad (3)$$

Where

Z = total transport cost

a_i = supply of rice from location i in bushel

b_j = demand for rice at location j

c_{ij} = transport cost per bushel in Naira per bushel

x_{ij} = quantity of rice transported from supply to demand locations in bushel

i = supply location

j = demand or destination location

Data on the quantity of rice supplied by each processing location to each market location were obtained from a survey of processing plants in eastern Nigeria. Distances between supply and demand locations were obtained from the Geographical Information Science (GIS) unit of the international Institute of Tropical Agriculture (IITA) while transport costs were obtained from field survey. Estimates of transport costs per kilometre were computed using equation (4) below.

$$C_t = \frac{(Q.P)/nb}{d} \quad (4)$$

Where

C_t = transportation cost per kilometre per bushel (25kg) in Naira

Q = quantity of rice transported in tons

P = Transport charge in Naira

nb = number of bushels conveyed

d = distance in kilometres

An average transport cost of N0.50 per kilometre per bushel was used to determine the optimal distribution plan for rice in eastern Nigeria. A sensitivity analysis was done using N0.74 (45%) per kilometre per bushel, in order to reflect the effect of higher transport charges obtained in some locations.

Results and discussions

Rice production Systems

Potential land area for rice production in Nigeria is between 4.6 million and 4.9 million ha. Out of this, only about 1.7 million ha or 35 percent of available land area is cropped to rice. Cultivable land to rice is spread over five ecologies, namely: rain fed upland, rain fed lowland or shallow swamp, irrigated rice, deepwater or floating rice and tidal mangrove swamp (table 1). Yields are highest for the irrigated systems followed by the rain fed lowland systems and the mangrove swamp systems. Yield is lowest in the deepwater/floating systems. Together the rain fed upland and low land account for 77 percent share of the national rice producing area in Nigeria.

Table 1: Features of rice production Systems in Nigeria

Production System	Major States covered	Estimated share of National Area	Average Yield /Ha	Share of Rice Production (%)
Rained Upland	Ogun, Ondo, Abia, mo, Osun, Ekiti, Oyo, Edo, Delta, Niger, Kwara, Kogi, Sokoto, Kebbi, Kaduna, FCT & Benue.	30%	1.7	17
Rained Lowland	Adamawa, Ondo, Ebonyi, Ekiti, Delta, Edo, Rivers, Bayelsa, Cross-River, Akwa Ibom, Lagos, all major river valleys e.g. Shallow swamps of Niger basin, Kaduna, basin, & inland swamps of Abakiliki & Ogoja areas.	47%	2.2	53
Irrigated	Adamawa, Niger, Sokoto, Kebbi, Borno, Benue, Kogi, Anambra, Enugu, Ebonyi, & Cross River, Kano, Lagos, Kwara, Akwa- Ibom, Ogun	17%	3.5	27
Deep Water Floating	Flooded areas Rima valley – Kebbi State & deep flood areas of Ilushi Delta State	5%	1.3	3
Mangrove Swamp	Ondo, Delta, Edo, Rivers Bayelsa, Cross-River, Akwa Ibom.	1%	2.0	1

The North Central zone is also the largest producer of rice in Nigeria, accounting for 47% of the total rice output in 2000 (Figure 1). This was followed by Northwest (29%) Northeast (14%) southeast (9%) and last but not the least (the southwest (4%). Kaduna state is the largest rice producing state in the country accounting for about 22 % of the country's rice output, followed by Niger State (16%), Benue State (10%) and Taraba State (7%).

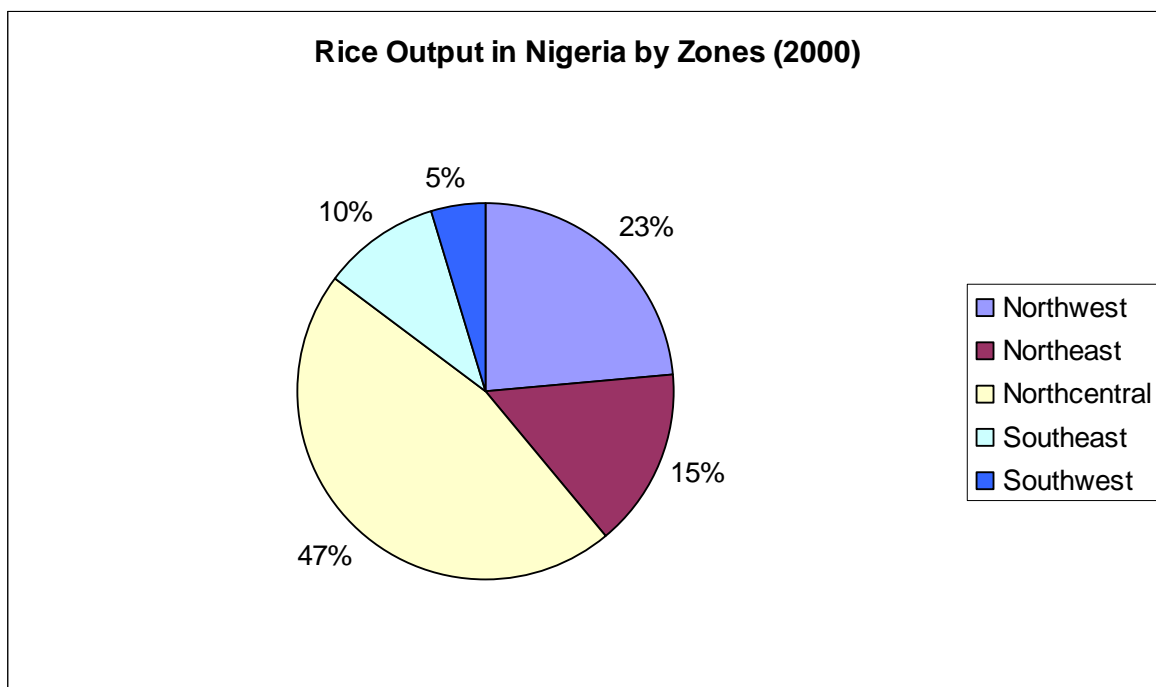


Figure 1: Distribution of rice output by production zones

At the farm level, rice is primarily produced for cash income. Nweke et al (1999) notes that even in the cassava producing areas of Nigeria, rice was the food crop that generated the largest amount of cash income followed by cassava for respective farming households. Principally small-scale farmers produce rice in farm holdings ranging from 1 to 2 ha per capita.

Effect of rice imports on domestic production

Rice commodity marketing is of two forms in Nigeria namely: paddy rice and processed rice. Processed rice also includes milled rice and rice flour. For paddy rice the major potential market is the processing sector. The demand of the processing industry for paddy is derived from the demand for the processed form mostly in the urban areas. Contribution of rice production to small farmer income and rural employment is linked to the availability of a thriving market in Nigeria. The two major potential markets are markets for commercial processing and the market for household consumption. In both instances, the performance of the marketing activities is solely in the hands of private actors, but is adversely affected by rice imports. Evidence (table 2) also indicates that the share of imported rice in the Nigerian urban market is relatively higher than domestic produced rice suggesting a dependence of the urban consumer on imported rice. Nigerian consumers will therefore measure the quality and competitiveness of domestic rice by the current standard and quality found in imported rice. Field observations also show that the markets for domestic rice are shrinking due to rice imports.

Table 2: Market share of foreign rice to local rice in selected urban markets, Eastern Nigeria.

Urban market	Local rice volume (tons)	Foreign rice volume (tons)	Total volume (tons)	Percent of foreign rice
Enugu	2270.00	5935.80	8205.80	72.33
Umuahia	417.00	14202.90	14619.90	97.14
Owerri	1786.90	15493.40	17280.30	89.60
Uyo	290.70	887.00	1177.70	75.53
Port Harcourt	442.90	26306.50	26749.40	98.34
Onitsha	4284.90	157600.00	161884.90	97.35
Calabar	321.00	790.10	1111.10	71.11
Aba	847.97	23177.10	24025.07	96.47

Three methods of rice processing can be identified in Nigeria. These are the traditional or hand pounding, the small mill processing and the large mill processing enterprises. The hand-pounding traditional method of processing rice paddy is still used by some village rice farmers especially in northern Nigeria. This system involves soaking of paddy for about 24 hours. After, the paddy is boiled in water for about 20 minutes. The boiled paddy is then spread in the sun to dry. After drying, the paddy is pounded in a mortar to separate husks and bran from the grains. The last stage of this process is winnowing. A major feature of the traditional system is that it is very slow and labour intensive. Furthermore, the final product obtained often contains a high percentage of broken grains and foreign bodies. This method is gradually dying away with the availability of small milling machines.

The small rice mills are the most predominant of the three rice-processing methods. Estimates (Presidential Rice Initiative 2002) indicate that there are about 3500 small/medium scale rice mills scattered all over Nigeria but most are concentrated in Lafia (Nasarawa state), Abakiliki (Ebonyi State) and Bida (Niger State). About 85 percent of Nigerian rice is processed through the small mills (Akpokodje *et al.*, 2001). This method of processing involves the use of mechanised milling units (often operating the old cono disc technology) with a maximum and minimum capacity of 600 and 200 – 300 tons per day respectively. The use of the rubber roller technology (a modernized technology) is not common among the rice millers. At the moment, most small rice mills operate below their installed capacity in Nigeria due to the unavailability of sufficient paddy for processing. Table 2 shows that capacity utilisation of small mills in the Abakiliki, Afikpo and Bende areas of eastern Nigeria were less than 10 % in 2001. Two systems of milling are usually practised: the custom milling where the farmer and/or trader pays a fee per unit quantity of rice and bulk processing by mill owners who also source the rice from producers, process and market.

Table 3: Capacity utilization in small rice processing plants in eastern Nigeria

Location	Installed capacity (tons)	Actual volume processed in 2001 (tons)	Capacity utilization (%)
Abakiliki	384930.00	27152.38	7.06
Afikpo	26100.00	10509.48	40.27
Adani	17820.00	3646.45	20.46
Omor	12060.00	7267.67	60.36
Ogoja	12060.00	1068.45	8.89
Bende	10260.00	555.43	5.41

In Nigeria, few large mills exist and government or quasi-government parastatals own most of these mills. The Badeggi, Uzo-Uwani, and the Agbede rice mills are typical examples of large mills in Nigeria. These mills combine rice milling with rice polishing, and in most cases, they possess separate parboiling equipment. Large mills are not popular with the Nigerian entrepreneur. It is also important to note that the existing large mills have broken down as a result of lack of spare parts and the general poor maintenance culture of government owned assets. The large mills will require substantial amounts of capital investment to rehabilitate them. It may be necessary to encourage private sector acquisition and management of such large rice mills in Nigeria. However, investors are put off by concerns of insecurity, policy inconsistency and infrastructure deficiencies. But with an estimated two to three million young Nigerians entering the workforce every year, Nigeria badly needs job creating investments.

Of the six major rice-processing centres identified in the in eastern Nigeria, Bende, Ogoja and Omor centres source all rice paddy from farmers within the locality. The rice processing centres at Abakiliki, Adani and Afikpo area source their paddy rice from farmers within the locality and from outside the locality (figure 2). External sources of paddy rice for plants located at Abakiliki, Adani and Afikpo centres came from the Northern and middle belt regions. Figure 2 further indicates that the external sources of paddy to Abakiliki rice mills are Nassarawa (30%), Taraba (20%), Benue (15%) and Gombe (15%) States. As at year 2001, 80 percent of the rice paddy processed in the Abakiliki centre came from outside the locality. Ezedinma and Kormawa (2002) had also confirmed this observation in a recent study of farm agribusiness linkages in Nigeria. The figure 2 also indicates that external sources of paddy rice to Afikpo rice processing centres are Benue (30%) and Nasarawa (15%) States. Hence, 45 percent of the paddy rice processed at the Afikpo rice mills comes from outside the Afikpo locality. This is also the case for the Adani plants where 50 percent of rice paddy was sourced externally from Nassarawa (20%) and Benue (30%) States.

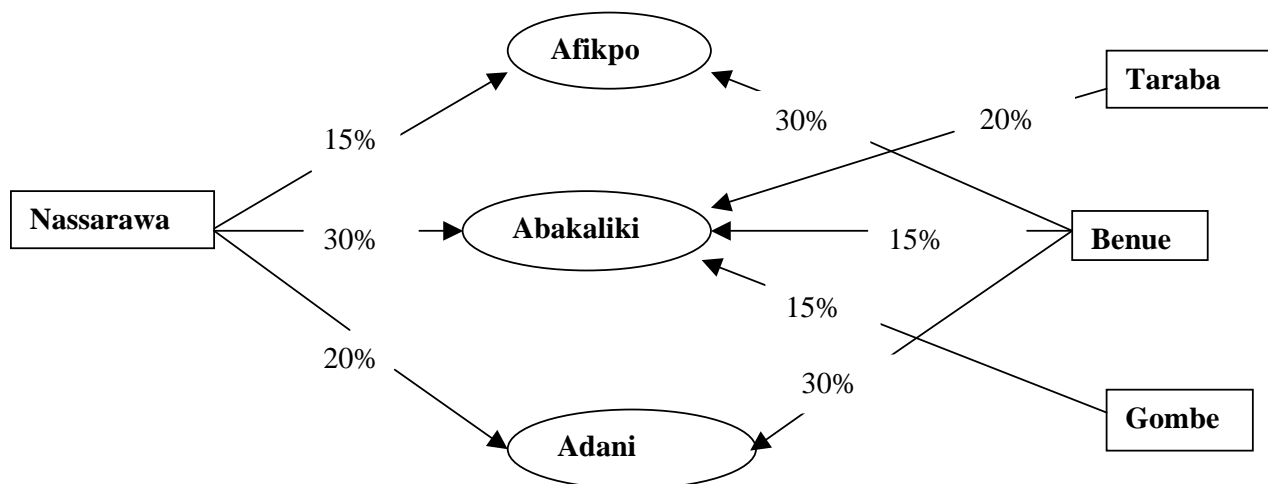


Figure 2: External sources of paddy rice to Abakaliki, Adani and Afikpo rice mills.

The Competitiveness of Domestic Rice

In the international market, rice is graded by quality usually in the percentage of broken rice, sortexed or non-sortexed long grain or short grain. For instance, the better (less percentage of broken grains) the quality, the higher the price in the international market (table 4). So quality determines price. There are also other types of Thai white rice namely 100 % grade B Thai white rice, 10% broken, 100% broken A1 extra super. Other products of rice in the international market are Thai parboiled rice, Thai glutinous rice, Thai fragrant rice (or Thai hom mali rice), Thai loonzaine rice, and Thai organic rice. Within each type there are also grades and standards, which again determine prices.

Table 4: International (indicative) prices for rice by grade and quality

Quality of rice	2001	2002
Thailand <5% broken	172.8	191.9
Thailand <25% broken	153.1	175.0
Thailand <35% broken	149.1	170.5
Thai A1 Special 100% broken	134.1	150.2

Source: www.worldbank.org/prospects/pinkshheets/pink0703.htm

The table 5 below compares the domestic prices of paddy and milled rice in Nigeria with the international prices of the worst grade rice White broken rice, Thai A1 super, f.o.b Bangkok. If we assume that the exchange rates in Nigeria reflect market forces (which is unlikely especially in 1993), then Nigerian domestic rice is expensive to produce (compare paddy prices) and expensive to process (milled rice) and so cannot compete in the international market. Unfortunately even at today's (2002) exchange rates (of 120.96 annual average) Nigerian milled rice is not cheap and could not have been able to compete in the international market from 1995 to date.

Table 5: International rice prices relative to domestic rice prices in Nigeria 1993 to 2001

Year	Exchange rate (N)	International rice price (\$/ton)*	Domestic rice (Paddy) \$/ton	Domestic rice (Milled) \$/ton	Prices (milled rice) at 2002 exchange rate (N120.96 = US\$1.00)
1993	24.67	160.29**	429.27	739.76	150.88
1994	22.00	186.12	544.09	994.55	180.88
1995	75.92	268.50	188.09	393.44	246.94
1996	80.00	234.06	323.0	566.00	374.34
1997	81.25	214.02	311.14	596.43	400.63
1998	82.75	215.16	386.1	593.35	405.91
1999	92.08	191.46	293.55	479.47	365.00
2000	100.6	142.96	265.00	436.28	362.85
2001****	112.03	135.38	334.55	532.36	493.05

*Based on international prices for White broken rice, Thai A1 super f.o.b Bangkok

**Source <http://apps2.fao.org/servlet/org.fao.waicent.ciwp.CIWPOQueryServlet>

***Source: PCU data Average annual market prices, 1993 to 2000

****Source RUSEP website: www.rusep.org

The question then is: if Nigeria's domestic rice were processed to the quality and standards of imported rice (i.e. polished, destoned and dirt free, with uniform grain characteristics) would its price be competitive in the local market. Field observations indicate that the technology to achieve this exists in Nigeria. The key issue is whether the local rice can be profitable after imputing the extra cost of processing required of the local rice to meet international standards or consumer preference in the Nigerian market. Through interviews it was observed that on the average an extra cost of 25 percent was needed to process domestic rice to the quality and standards of imported rice. This extra cost will be incurred for additional technologies and labour that will be used to de-stone, clean out dirt and polish the rice. The result of the analysis of the extra cost that will be incurred for further processing of local rice if it must be of international standard is shown in table 6.

Table 5: Comparing price competitiveness for domestic and imported rice

Mills	Millers price ₦/25kg	Additional processing cost (25%) ₦/25kg	Marketing margin ₦/25kg	Estimated Urban market price ₦/25kg	Price of imported rice ₦/25kg	Percent age Difference
Abakaliki	900.00	225.00	613.00	1738.00	1575.00	10.30
Adani	1018.75	254.68	431.00	1704.55	1575.00	8.23
Omor	1068.75	267.18	531.00	1866.93	1575.00	18.53
Bende	1137.5	284.37	461.00	1882.87	1575.00	19.50

The result of the analysis show that although improving the standards of local rice was feasible and desirable, it may not be competitive. An additional processing cost of 25 percent would raise processing costs at Abakiliki rice mills to ₦255.00/bushel followed by Adani, ₦254.68/bushel, Omor, ₦267.18/bushel and Bende, ₦284.37/bushel. The urban market price for domestically polished rice from the Abakiliki mill is estimated to be ₦1738.00/bushel, ₦1704.55/bushel for polished rice from Adani mills, ₦1866.93/bushel for Omor mills and ₦1882.87/bushel for Bende mills. This result indicate that further processing of domestic rice to meet the quality and standards of imported rice will mean that rice from the Abakaliki mills will be 10.30 percent more expensive than the imported rice while rice from the Adani mills will be more expensive by 8.23 percent. Similarly, rice from the Omor mills will be more expensive by 18.53 percent and Bende by 19.50 percent.

A major constraint expressed by processors with extra processing is the issue of grading associated with paddy supply from farmers. This creates the problem of irregular sized grains of diverse colours even after the extra processing is done. This feature will continue to make imported rice preferable to consumers than domestic rice even after polishing, de-stoning and clean up.

Table 6: Marginal cost of non-optimal distribution of rice in eastern Nigeria

Demand	Supply					
	Abakiliki	Adani	Afikpo	Omor	Bende	Ogoja
Uyo	9.44					
Owerri	8.93					
Umuahia		15.66	15.66	15.66	32.28	15.66
Aba	6.43					
Enugu		92.80	49.14	49.14	49.14	49.14
Benin City	68.37			157.23		
Onitsha				144.64		
Ikom		29.48	94.45	29.48		
Okigwe	8.77					
Ekwulobia		9.08	9.08	9.08	9.08	9.08
Port Harcourt	34.73					
Obollo afor		121.53	86.80	86.80	86.80	86.80
Nsukka		113.02	86.80	86.80	86.80	86.80

Table 6 shows that a 45 % increase in transport cost has no effect on the optimal distribution plan for producers in Abakiliki and Omor zones. However, it was no longer cost effective to supply from Adani to Onitsha; Afikpo to Uyo, Owerri and Port Harcourt and from Bende to Onitsha. Generally, the closer the demand market to supply zone, the less optimal it becomes with increase in transport cost. thus, as transport cost increases, it is safe to deliver supplies to markets farther away from production zones than those close to it. Thus the marginal cost of non optimal rice supplies in the local markets in Nigeria are likely to increase with increases in transportation cost.

Effect of policy inconsistency on domestic rice production

The decline in domestic rice production cannot all be blamed on increasing rice imports. The Nigerian government has actively interfered with the rice economy over the last thirty years. The country's policy on rice has been inconsistent and has oscillated between import tariffs and import restrictions including outright ban. For instance, between 1986 and 1994 rice imports were illegal. In 1995 imports were allowed at a 100 % tariff. In 1996 the tariff was reduced to 50% but came full cycle to 100 % in 2002. With the various policy measures, domestic rice production has responded but not sufficiently to meet increased local demand (figure 3). For instance in 1999 the nations self-sufficiency in rice production declined to about 76%. Domestic self-sufficiency was adversely affected during the crisis years of 1977 to 1985 when rice imports were regulated by official import license. Presently, the government has imposed statutory charges on rice imports to the tune of \$270 per ton while a presidential initiative on rice has been set up with the mandate to improve self-sufficiency in rice production in three years and produce for export in five years.

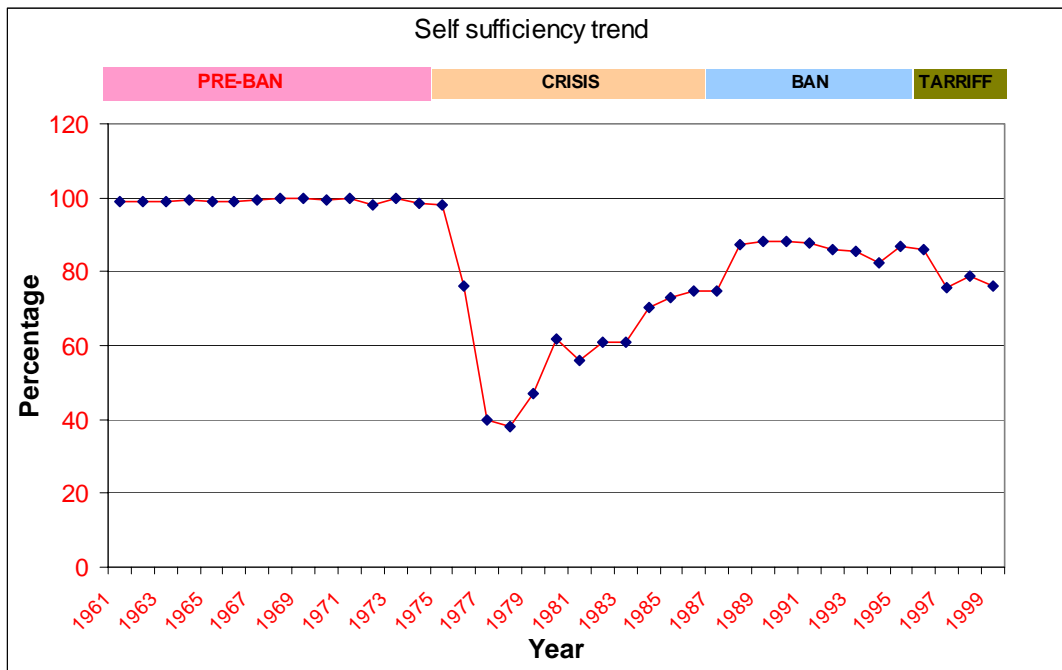


Figure 3: Policy change and effects on domestic rice output in Nigeria 1961 - 2002

The policy inconsistency in the rice sub sector has actually discouraged local production over the years. Figure 4 shows that since the removal of the ban on rice imports in 1992, the growth in domestic rice output declined significantly, with growth being negative in 1995. A similar negative growth rate exists to date justifying the overarching need to intervene proactively in domestic rice production and improve its quality and competitiveness in the domestic and perhaps regional markets.

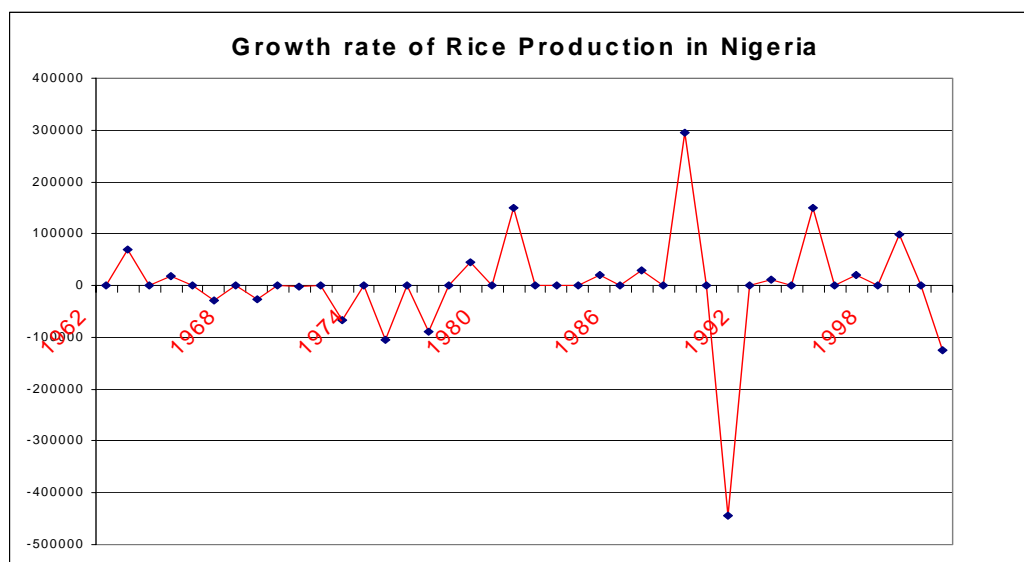


Figure 4: Growth rate in rice production in Nigeria.

A related constraint is the rising cost of labour and due to labour out migration. Labour costs accounts for 50 – 55 percent of the production cost in the rice enterprise (Okorji and Onwuka, 1994). In the inland valleys labour costs are more than 80 % of the total production costs (Ezedinma 2001). In a recent survey, Ezedinma and Kormawa (2002) observed that the most important factor that led to the collapse of farm agribusiness linkages in the major rice producing area of Abakiliki, southeast Nigeria was the high cost of labour for rice production. Labour for rice production became expensive because the active labour force (especially the young men) left the rural areas in very large numbers. The attraction to the cities is due to the discovery of a new lucrative enterprise and alternative off farm employment. The increase in labour costs coupled with increased rice imports eroded the profit margin of farmers and made it difficult to meet obligations and commitments with processors.

Conclusions

Nigeria can produce rice sufficiently for its citizens and even for export but cheap imports will continue to dominate the domestic market until the country can put its act together. No doubt, Nigeria should support free trade but only in areas where it cannot develop domestic capacity. In the case of rice imports, the country's policy should be protective until it gains economies of sale, efficiency and self-sufficiency in domestic production. Import substitution should be encouraged to acquire required machinery for rice production on a commercial scale. But this should be done by the private sector and regulated by government.

Policy interventions should therefore focus on intensifying rice production and increasing on-farm yield to reduce production costs, Improving quality and standard of rice and reducing post harvest losses, facilitating rural enterprises and businesses especially in small mills to sustain productivity, incomes and employment and strengthening human and institutional capacities to support the production, processing and marketing of rice competitively in Nigeria.

It must be understood however, that there are no quick fixes to the development of the rice sector in Nigeria. The bottom line for any type of development strategy is the accumulation of knowledge and learning and for self-sufficiency in rice production to be effective; there is the need to create the institutions that support markets. It is not the policy instrument utilised that makes the difference, it is the implementation and monitoring of these policies. We should let the market set the prices and reduce the role of government in direct development of the sub sector. In a country with very little support for entrepreneurial activity, inadequate data, few institutional supports for the private sector, it is hard to determine the effectiveness of investment on the rice sub sector. The elimination of price distortion will result in quick increases in output and productivity, which in turn results in the expansion of the labour market consequently reducing poverty. Note that we are not preaching total abstinence from a protectionist strategy, because protection is necessary for the sake of learning or leapfrogging. It is the implementation and monitoring of policy that is important and not the policy itself.

References

- Akpokodje G, F Lancon and O Erenstein, 2001, Nigeria's Rice Economy: State of the Art, Draft Report submitted to WARDA, Bouake, Cote d' Ivoire November
- Ezedinma C.I and P.M Kormawa (2002) Farm Agribusiness Linkages in Nigeria, A Report presented to the Agricultural Management, Marketing and Finance Service of the Food and Agriculture Organization (FAO) of the United Nations, Viale delle Terme di Caracalla, 00100, Rome, Italy
- Ezedinma C I and T. K. Atala, 2002, Impact of inter-regional trade on the development of rice producing areas in Nigeria. A Research Report, Draft
- Ezedinma C.I. 2000 Farm Resource Allocation and Profitability of Arable Crop Enterprises in the Humid Forest Inland Valley Ecosystem: A case Study of Ozu Abam in Southern Nigeria UNISWA Journal of Agriculture, Vol 9 pp 48-56
- FAO (2002) FAOSTAT. www.fao.org
- Nweke F I, B.O Ugwu, A.G.O.Dixon, C.L.A. Asadu and O Ajobo 1999, Cassava production in Nigeria: a function of farmer access to markets and to improved production and processing technologies, COSCA working Paper No. 20, International Institute of Tropical Agriculture Ibadan, Nigeria
- Omotayo A, C.O Chikwendu and K Adebayo 2001. Two decades of world bank assisted extension services in Nigeria: Lessons and challenges for the future, Journal Agricultural Education and Extension Vol 7 No. 3 pp 1143 – 152
- Okorji C.E and C Onwuka, 1994, A comparative analysis of costs and returns of non irrigated and irrigated rice production systems in Uzo Uwani local government area of Enugu State, Nigeria. Agricultural Systems in Africa, vol 4 No 2
- RUSEP website 2003, www.rusep.org
- Von Oppen, M. and Scott J.T. 1993 A spatial equilibrium model for plant location and inter regional trade. In Agricultural and Food Marketing in Developing countries: Selected Readings, John Abbot (ed) CAB International and CTA, London pp 182 – 192
- WARDA (1996) Rice trends in sub Saharan Africa: A synthesis of statistics on rice production, trade and consumption (1973 – 1992), West Africa Rice Development Association, Bouake, Cote d' Ivoire
- World Bank (2003) www.worldbank.org