

**THE NIGERIAN RICE ECONOMY IN A COMPETITIVE WORLD:  
CONSTRAINTS, OPPORTUNITIES AND STRATEGIC CHOICES**

*Final draft*

**Nigeria's Rice Policy And Development:  
A Review**

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**Table of contents**

1	Introduction.....	1
2	Trends in Nigeria’s Rice Economy.....	2
2.1	Rice production .....	2
2.2	Rice Demand .....	6
2.3	Rice imports .....	6
3	Nigeria’s Rice Production Systems .....	7
3.1	Profitability of Rice Production in Nigeria .....	9
3.1.1	Profitability across rice-based systems .....	9
3.1.2	Profitability across crops.....	9
3.1.3	Technology adoption and profitability.....	10
3.1.4	Discussion .....	10
4	Rice Processing and Marketing .....	11
4.1	Rice Processing .....	11
4.1.1	Processing technologies .....	11
4.1.2	Profitability of Rice Processing .....	12
4.2	Rice Marketing.....	12
4.2.1	Marketing of Imported Rice.....	12
4.2.2	Marketing of Local Rice .....	12
4.2.3	Marketing Margin .....	12
5	Policy environment and rice sector development.....	13
5.1	Changes and sequence in the policy environment.....	13
5.2	Rice development programs .....	14
5.3	Macro- and sectoral policy .....	15
5.3.1	Trade policy .....	15
5.3.2	Exchange Rate Policy .....	15
5.3.3	Fertilizer Policy.....	16
5.3.4	Land Policy .....	16
6	Conclusion & discussion .....	17
	References.....	19

## **1 Introduction**

Rice has traditionally been an item in the food basket of Nigerians. However, it was not until recently that the commodity assumed a phenomenal role in the diet of the majority of Nigerians. For instance, during the 1960's Nigeria had the lowest per-capita annual consumption of rice in the sub-region (average of 3 kg). Since then, Nigeria's per-capita rice consumption level has grown significantly at 7.3% per annum. Consequently, per-capita rice consumption has risen from 18kg in the 1980s to 22 kg in the 1990s. Although this is at par with respect to the rest of West Africa, Nigeria's consumption level still lags the rest of the sub-region (34 kg in 1995-1999). It is postulated that Nigeria's per capita rice consumption level is likely to continue to rise for some time.

A major factor in the shift in consumer preferences towards rice in Nigeria is the rapid rate of urbanization. Rice is easy to prepare compared to other traditional cereals, thereby reducing the chore of food preparation and fitting more easily in the urban lifestyles of rich and poor alike. Rice indeed is no longer a luxury food in Nigeria and has become a major source of calories for the urban poor. For example, the poorest third of urban households obtain 33% of their cereal-based calories from rice, and rice purchases represent a major component of cash expenditures on cereals (World Bank, 1991). Data from several states in Nigeria demonstrate that rice availability and rice prices have become a major welfare determinant for the poorest segments of the countries' consumers who also are least food secure.

Although rice production in Nigeria has boomed over the years, there has been a considerable lag between production and demand levels, with imports making up the shortfall. The quantity of rice imports in recent times has soared from 300,000 Mt in 1995 to 794,000 Mt in 2000 at a cost of US\$ 300 million.

The Nigerian government has actively interfered in the Nigerian rice economy over the last thirty years as a result of the strategic nature of the commodity. However, policy intervention has been largely inconsistent and to some degree ineffective. For instance, despite the rice import ban during the late 1980s and early 1990s, a considerable amount of imported rice still gained entrance into the domestic markets. With the removal of the rice import ban in 1995, consumption resumed its rapid growth taking advantage of the downward trends of rice price on the world market.

This fluctuation and limited capacity of the Nigerian rice economy to match the domestic demand has raised a number of pertinent questions both in the policy circle and amongst researchers. What factors account for the huge disparity between domestic rice production and the demand for the commodity in Nigeria? What role has government policy played in engendering the present rice scenario? Which strategy could lead to a sustainable contribution of the Nigerian rice economy to the national food-security within a competitive and open economy?

WARDA launched with its Nigerian partners and US-AID financial support a special project to further investigate these questions. The project relies on the analysis of existing and available information, complemented by the collection of additional information to fill eventual knowledge gaps. The goal is to formulate a feasible strategy to enhance the competitiveness of Nigerian rice producers through research and a policy dialogue so as to build a shared vision among stakeholders.

This paper provides a review of the available information on the Nigerian rice economy. The specific objectives of the study are:

- to characterize Nigeria's rice economy;
- to document and analyze the major trends and features of the rice economy;
- to identify gaps and areas for further research.

Information utilized in the study were obtained mainly from within the country. The major sources of information were secondary data and literature obtained from various institutions such as the various Universities and Research Institutes, Ministry of agriculture and data generating bodies such as the Federal Office of Statistics (FOS), National Agricultural Extension Research and Liaison Services (NAERLS), Project Coordinating Unit (PCU), Federal Department of Agriculture (FDA) and the Central Bank of Nigeria (CBN). However, where pertinent information are not available locally, recourse was made to international sources such as the Food and Agricultural Organization (FAO). In addition, expert consultations were made with rice policy makers, researchers, millers, farmers, importers, distributors and consumers of rice.

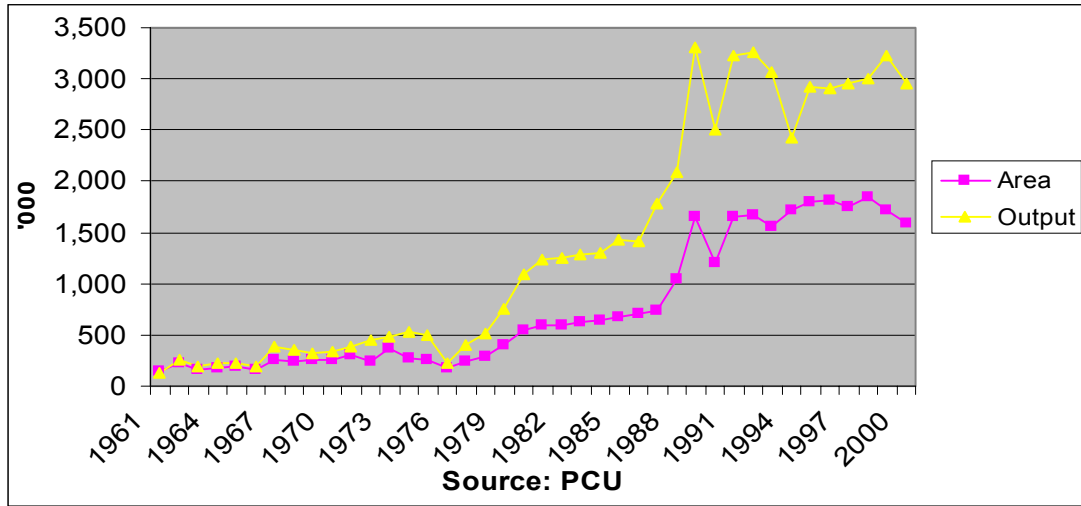
After this introduction, the paper initially focuses in section 2 on the Nigerian rice trends at an aggregate level of production, consumption and trade and among the different regions. The following sections look at the rice economy at the micro-level. Section 3 focuses on production; it looks at the characteristics of the various rice-based systems encountered in Nigeria and then at the profitability of the various systems. Section 4 focuses on downstream operations: marketing and processing. The final section reviews the Nigerian policy environment – both in terms of rice specific policy and general policies that affect rice. It thereby reviews various relevant government programs and projects and assesses the implications of the macro-economic policies on the rice sector.

## **2 Trends in Nigeria's Rice Economy**

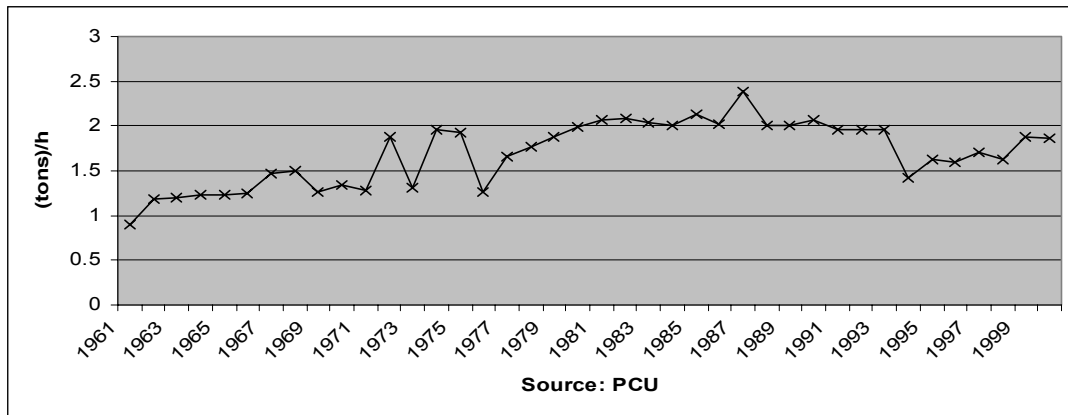
### ***2.1 Rice production***

Rice is cultivated in virtually all the agro-ecological zones in Nigeria. Despite this, the area cultivated to rice still appears small. In 2000, out of about 25 million hectares of land cultivated to various food crops, about 6.37% was cultivated to rice. Figure 1 shows that paddy rice production in Nigeria first experienced a boom in 1967 when output stood at 385 thousand tons. During this period, area cultivated to rice stood at 262 thousand hectares while average national yield was 1.47 tons per hectare (Figure 2). Another significant improvement in rice production in Nigeria occurred in 1980 when output increased to 1 million tons while area cultivated and yield rose to 550 thousand hectares and 1.98 tons per hectare respectively. Throughout the 1980s, rice output and yield increased. But in the 1990s, while rice output increased, the yield of rice declined, suggesting extensive rice cultivation.

**Figure 1 Area Cultivated and Rice Output in Nigeria**



**Figure 2 Yield of rice in Nigeria**

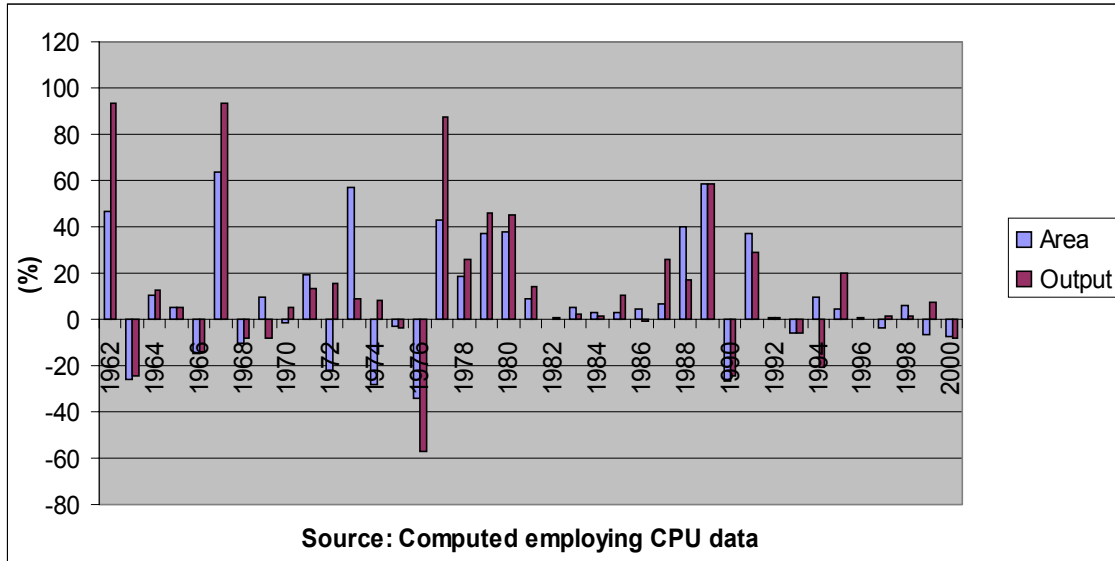


**Error! Reference source not found.** shows that growth in rice output oscillated in the 1960s with no clear-cut pattern. Output growth increased in the early 1970s but declined in the mid 70s before picking up again in 1977. Growth in output declined between 1981 and 1983 and remained virtually stable at a zero growth rate till 1984. After the ban on rice importation in 1985, the figure shows that growth in output rose between 1987 and 1989 before declining in 1990. The figure shows that since the removal of the ban on imports in 1995, the growth in rice has consistently been on the decline, with growth being negative in 2000.

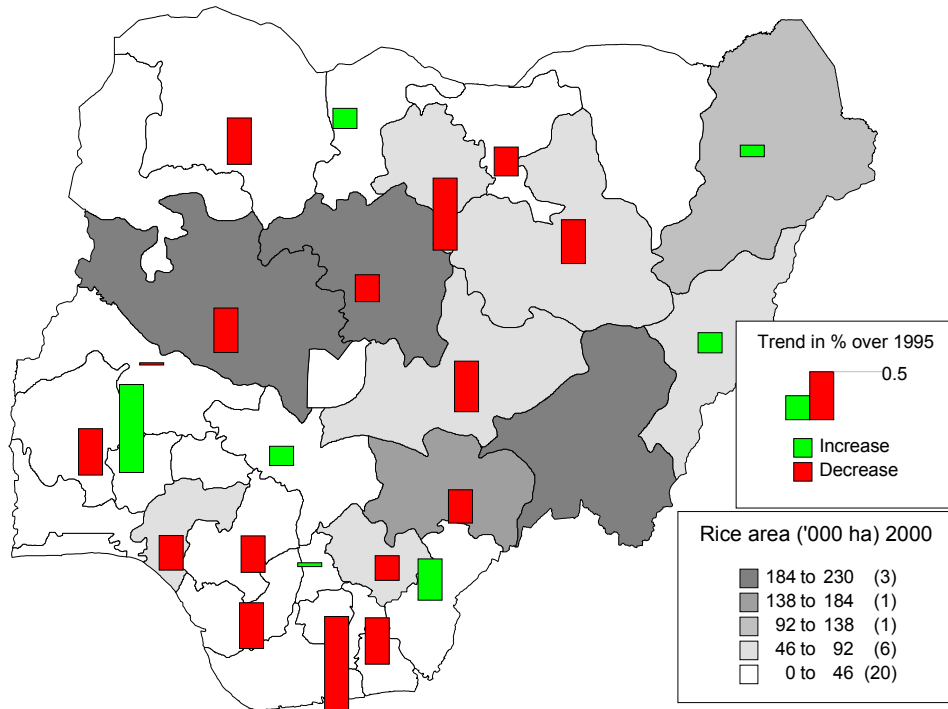
There is a great disparity between the states of the federation in rice production both in terms of output and yield. In 2000, Kaduna state was the largest producer of rice, accounting for about 22% of the country's rice output. This was followed by Niger state (16%), Benue state (10%) and Taraba state (7%). During the dry season, Benue state accounted for the highest output (61%). On a geographical zone basis, Figure 5 shows that, the Central zone was the largest producer of rice in Nigeria, accounting for 44% of total rice output in 2000. This was followed by the North West (29%) while the South West was the least (4%). In terms of trend most of the producing zones have experienced a decrease in their cropped area between 1995 and 2000, (between 20% to

40%), the major one being recorded in Imo and Kano states. Only 6 states, Osun, Kogi, Cross river, Borno, Adamwara and Katsina have increased their rice cropped areas during the last five years.

**Figure 3 Growth in Area Cultivated and Output**

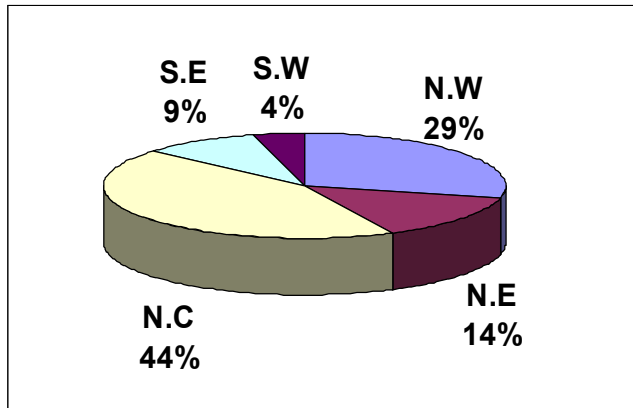


**Figure 4 Rice cropped area by state in 2000.**



Source: PCU, 2000.

Figure 5 Rice Output by Zone ( 2000)

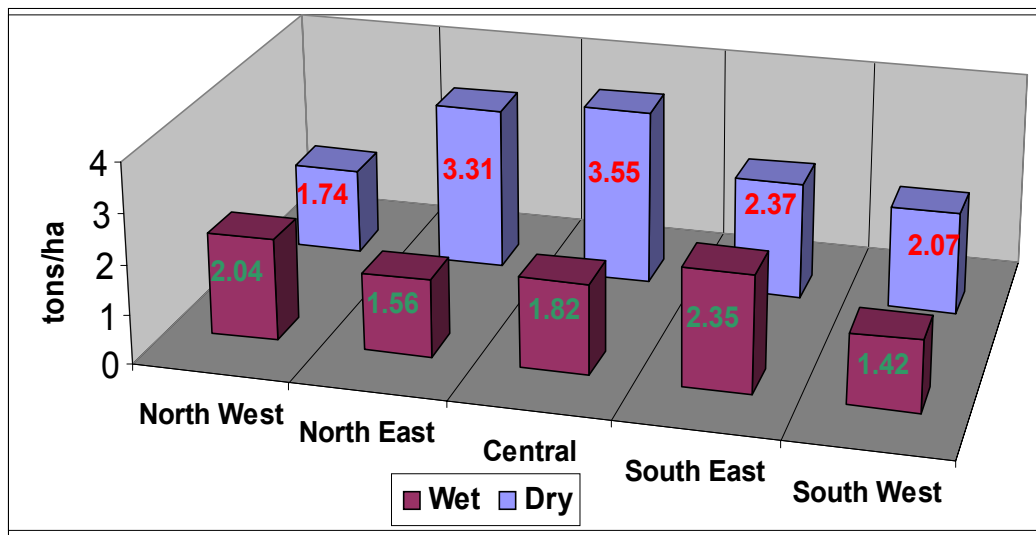


Source: PCU, FMARD, 2001

A great variation also exists between the states in terms of yield. The average national rice yield during the dry season (3.05 tons/ha) was higher than that of the wet season (1.85 tons/ha). This could be a confirmation of the higher yield acclaimed to be associated with irrigated rice production system. During the wet season there is considerable variation between states. States with relatively high yields include Enugu (3 tons/ha), Imo (2.7 tons/ha), and Ebonyi (2.5 tons/ha). For the dry season, Benue (3.6 tons/ha) and Adamawa (3.3 tons/ha) had yield higher than the national average.

As already noted, the relatively higher yield during the dry season could be partly due to irrigation. On a zonal basis, **Error! Reference source not found.** shows that during the wet season, the yield of rice was highest in South East (2.4 tons/ha). This was followed by the North East (2.0 ton/ha) and the Central zone (1.8 tons/ha) while the South West had the least (1.4 tons/ha). For the dry season, the figure indicates that yield was highest in the Central zone (3.6 tons/ha) but lowest in the North West (1.74 tons/ha).

Figure 6 Rice Yield in Agroecological Zones in Nigeria (2000)



## **2.2 Rice Demand**

The demand for rice in Nigeria has been soaring at a very fast rate over the years. A combination of various factors seems to have triggered the increase in rice consumption. According to Akanji (1995), rising demand was partly the result of increasing population growth. Also, increased income levels following the discovery of crude oil led to a rise in the demand for the commodity. The most important factor contributing to the shift in consumer preferences away from traditional staples and toward rice is rapid urbanization and associated changes in family occupational structures. As women enter the work force, the opportunity cost of their time increases and convenience foods such as rice, which can be prepared quickly, rise in importance. Similarly, as men work at greater distances from their homes in the urban setting, more meals are consumed from the market where the ease of rice preparation has given it a distinct advantage. These trends have meant that rice is no longer a luxury food but has become a major source of calories for the urban poor. The average Nigerian now consumes 24.8 kg of rice per year, representing 9% of total caloric intake (RiceWeb, 2001).

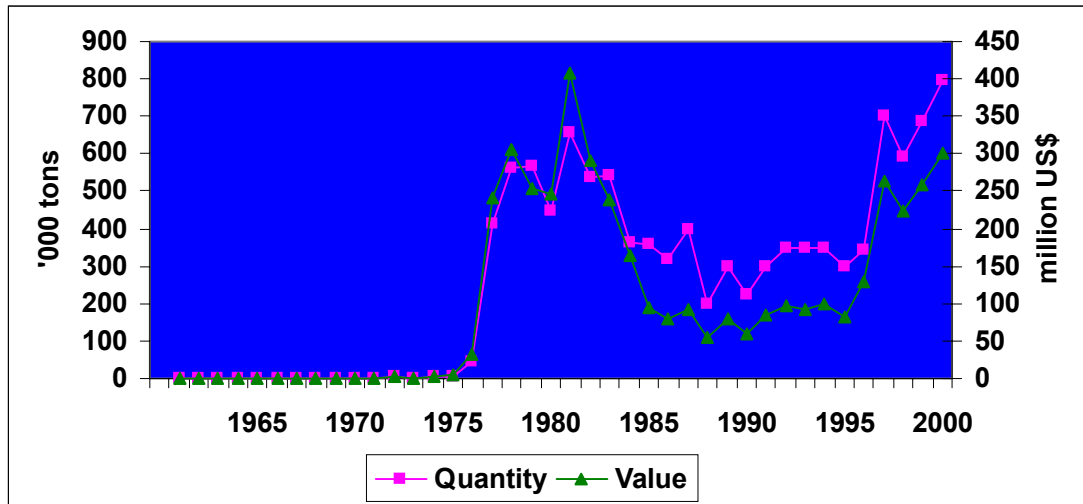
## **2.3 Rice imports**

Though rice contributes a significant proportion of the food requirements of the population, production capacity is far below the national requirements for rice (Wudiri and Fatoba, 1992; and Ladebo, 1999). In order to meet the increasing demand for rice, Nigeria has had to resort to importation of milled rice to bridge the gap between domestic demand and supply. gives an indication of rice importation by Nigeria. The figure reveals rice import was very insignificant in the 1960s and early 1970s. However, there was a phenomenal rise in imports in 1977 as the quantity of rice imported in this year alone (45 thousand tons) was more than the combined quantity of rice imported during the 1961-1975 period. Another major phenomenal rise was experienced in 1977 when import rose to 413 thousand tons. Rice imports did not begin to decline until 1981 as a result of some policy measures put in place to check the importation of the commodity. Even then, the quantity imported on an annual basis was over 300 thousand tons. Imports dropped significantly from 1985 when the ban was placed on rice. Although, rice imports began to rise again in 1991, major importation did not begin until after the lifting of the ban in 1995.

Figure 7 also reveals that whereas Nigeria spent about \$0.1 million on rice importation in 1970, by 2000, the value of import was \$300 million. This implies that between 1961 and 1999, Nigeria had spent over \$4 billion on rice importation alone, an average annual import value of over \$102 million. This raises a number of questions. Why spent such a he some of limited foreign exchange on rice imports when the country has the capacity to be self-sufficient in rice? Why has government policy on rice importation been highly inconsistent? Is government responding to some external and/or domestic pressure? Does the government not have confidence in the ability of the local producers to respond to the challenges of increased demand for rice? Or have they been so slow in responding?



Figure 7 Quantity and Value of Nigeria’s Rice Imports



### 3 Nigeria’s Rice Production Systems

Nigeria encompasses four major agro-ecological zones, with rainfall diminishing along a South-North gradient (Adedipe et al., 1996). The forest zone borders the coast in the South, and going Northward gives way to the Guinea and Sudan Savannah. Nigeria’s North Eastern fringe falls within the Sahel zone.

Rice can be grown over a wide range of edaphic and ecological conditions. In order to formulate a national strategy and action plan for increasing rice production, due cognizance must be made of these widely varying conditions. The prevalent types of rice production systems in Nigeria include rainfed upland, rainfed lowland and irrigated lowland. Other less common rice production systems include deep water and mangrove rice (Singh et al., 1997). Rice farmers tend to be small-scale, with farms of 1-2 ha. Figure 8 shows that the lowland system is the largest rice production system in Nigeria (48%). This is followed by the upland (30%) and irrigated (16%) systems. The floating and mangrove system accounts for 5% and 1% respectively. Figure 9 gives the geographical distribution of rice area by ecology. Figure 10 shows that the irrigated system has the highest yield (3.5 tons/ha) followed by the lowland system (2.2 tons/ha) and the upland (1.7 tons/ha).

Figure 8 Rice Production Systems in Nigeria (2000)

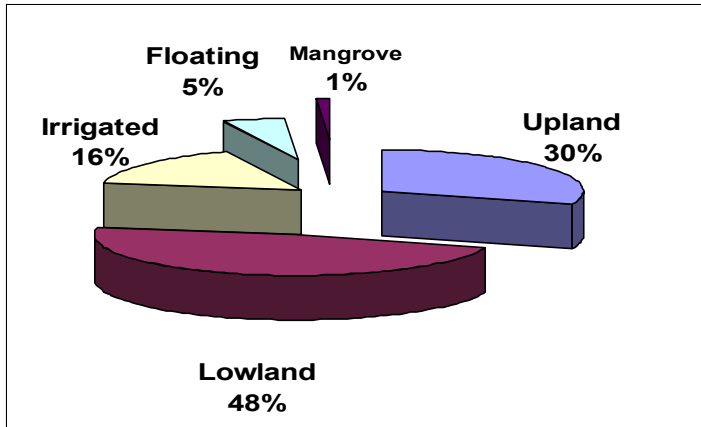


Figure 9 Geographical distribution of rice area by ecology in Nigeria

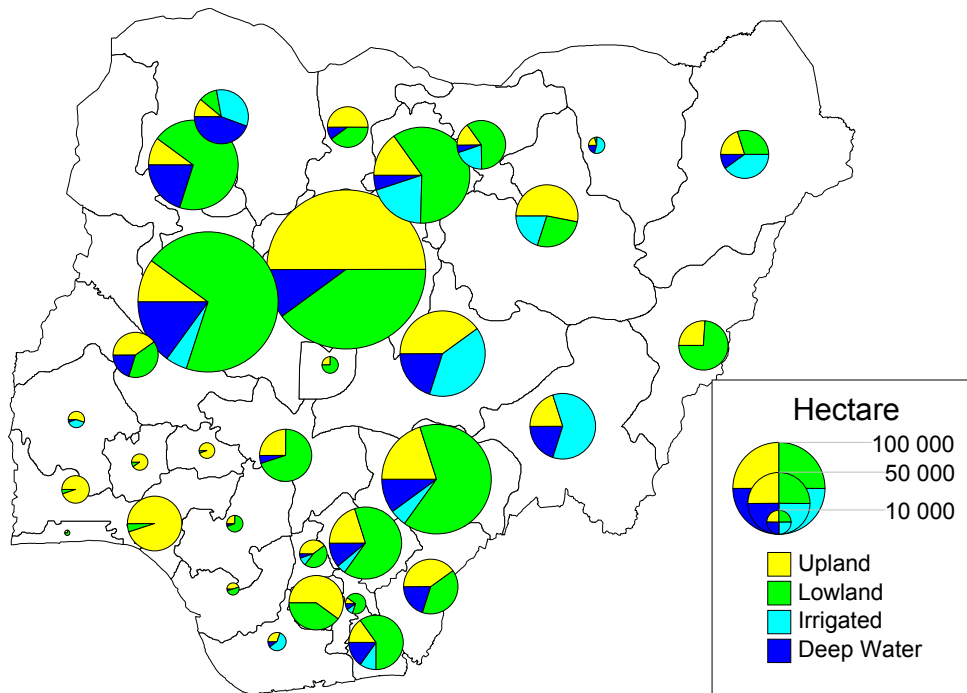
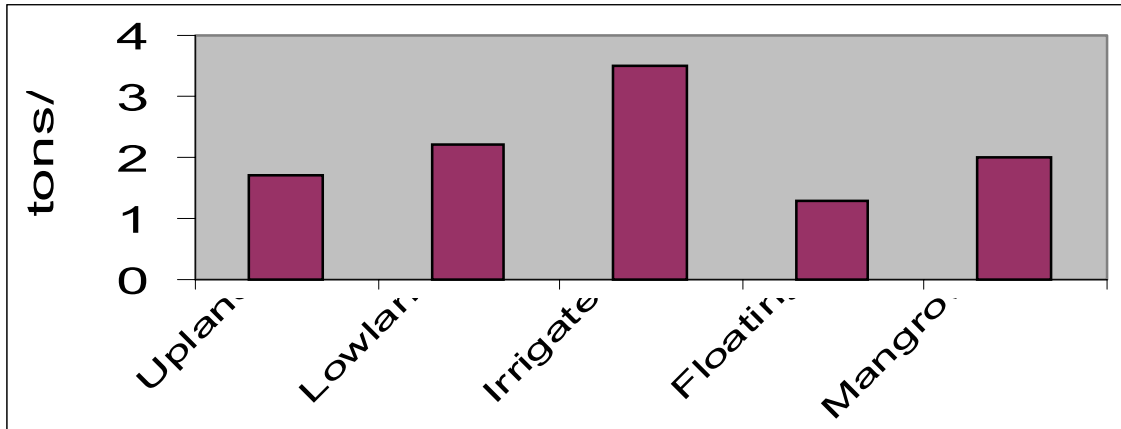


Figure 10 Rice yield by system in Nigeria (2000)



### 3.1 Profitability of Rice Production in Nigeria

Profitability is a major economic consideration in the cultivation of rice in Nigeria. Accordingly, several attempts have been made to estimate the costs and returns from the cultivation of the commodity. Various studies were reviewed – first across rice-based systems and subsequently across crops.

#### 3.1.1 Profitability across rice-based systems

Olagoke (1991) compared the average production costs, input usage and returns for the major rice production systems in the Uzo-Uwani area of Enugu state, a major rice producing state in SE Nigeria. The study found the lowland system more profitable than the irrigated system. The upland system was discovered to be the least profitable. Okorji and Onwuka (1994) compared the profitability of the irrigated rice system with the non-irrigated. It found the net return per hectare for the irrigated system higher than that of the non-irrigated system. The higher return obtained from the irrigated rice system was as a result of the higher paddy yields obtained under the irrigated conditions. (Nwoye, 1997) investigated the economics of rice production by small-holder farmers in Anambra state, SE Nigeria focusing specifically on swamp rice which is the dominant system in the area. Rice production was observed to be more revenue yielding than other relative crops. Fabusoro (2000) studied upland rice cropping systems in Ogun state in south west Nigeria. The profitability of sole cropping of rice was compared with mixed rice cropping. It was discovered that the various mixed rice cropping were more profitable than sole rice cropping, with the rice/melon system being the most profitable.

#### 3.1.2 Profitability across crops

Attempts have also been made in the literature to compare the profitability of upland and lowland rice production with other food commodities. This comparison is very crucial in the light of the fact that farmers are primarily motivated by profitability considerations and therefore are likely to shift resources from rice to other commodities if it is found that rice is relatively less profitable. Adedipe et al (1996) compared the profitability of rice production with other food commodities in the central zone. The results of the study show that that cassava cultivation is the most profitable.

This is followed by Cowpea and rice. Akande (1994) assesses the comparative advantage of different regions across Nigeria for producing various food grains – in particular rice, maize, sorghum, millet and cowpea. The study also distinguishes between various crop production technologies, mixed and sole cropping and for rice distinguishes between upland, rainfed lowland and irrigated. The study highlights that the comparative advantage of the different agro-ecological zones varies over crops. Only a few production technologies were found to be economically competitive. Rice production did not have a pronounced economic competitiveness in any of the agro-ecological zones considered (Forest, Guinea and Sudan savannah). It should be noted though that at the time of the study rice production was protected by the import ban.

### **3.1.3 Technology adoption and profitability**

Other studies have emphasized particular technologies – for instance in terms of adoption and economic returns to adoption. NAERLS (as cited by Omotayo et al 2001) have assessed the adoption of technologies on selected food crops in some ADPs across the country. NAERLS (1997) reveals that among the various technologies extended to the various crops in the study areas, technology adoption is lowest for rice. The table indicates that less than 20% adoption rate was recorded on improved varieties of rice, 7% for pesticides, 24% for fertilizer use and 16% for storage. Some of the reasons advanced for the low adoption of some of the technologies include unavailability and high cost of these technologies.

The use of mechanization of field operations with tractors in Nigerian agriculture is limited. Okereke (1991) found that using tractors is profitable under some circumstances and confirm that tractor use can ensure timely preparation of land to take advantage of the early rains. However, tractors were not readily available, in spite of the existence of private and government tractor hire services. The government tractors were frequently in need of repair. Furthermore, Akande (1994) highlighted that mechanization in the early 1990s was socially costly and not in the nation's interest.

### **3.1.4 Discussion**

Nigeria is a vast country with a variety of agroecological zones and rice production systems. The foregoing discussion has highlighted that numerous studies in relation to Nigerian rice production systems already exist. Still, most studies provide only an assessment for a particular site at a particular time – whereas systems are diverse and dynamic. Consequently, it becomes difficult to obtain a comprehensive overview – both in terms of time and space.

The widespread cultivation of rice throughout Nigeria suggests that its cultivation is an attractive option for numerous farmers. The various assessments of profitability of rice in the literature indeed indicate that rice cultivation in Nigeria was and is profitable.

Irrigated rice production systems typically obtain the highest yield across the rice production systems. Private returns to irrigated rice also appear to be favourable. However, these typically do not account for the actual investment cost made by the public sector. With the retrenchment of the public sector, the scale of irrigation schemes has diminished substantially whereas water users are to increasingly cover investment and maintenance costs themselves. It remains to be seen whether irrigation in the new set-up remains privately profitable. For rainfed systems, rainfed lowland rice appears to have more favourable returns than upland rice. In addition, lowland rice cultivation

also appears to be attractive vis-à-vis some other major food crops such as maize, sorghum, soyabean, yam and groundnut.

## **4 Rice Processing and Marketing**

The purpose of this section is to describe and analyse the prevalent rice processing systems in Nigeria. The analysis in this section has been highly limited by the paucity of data. This stresses the urgent need for a comprehensive study of rice processing in Nigeria before appropriate policy action plan can be advanced on the relative efficiency or comparative advantage of each identified system.

### **4.1 Rice Processing**

#### **4.1.1 Processing technologies**

##### **Parboiling**

Parboiling is often done using local drums. The traditional domestic parboiling techniques are well documented by Stuykers (1982). There is the complete absence of modern technology for the drying of parboiled paddy. Often, drying is done by the road side under the sun. This accounts for the presence of foreign bodies such as stones in the final product. Sun drying in the open does not allow for drying during the rainy seasons. Again, this accounts for the low level of milling during such periods. Where it is possible to dry during the rainy season, often the paddies do not dry properly and this partly accounts for the foul odour of the final product.

Ojehomon et al (1998) provides a comparison of rice parboiling technologies in Niger State.

##### **Milling**

Three systems of rice processing can be identified in Nigeria. These are the Traditional or Hand-pounding System, the Small Mill Processing System and the Large Mill Processing System.

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. Given these limitations, this system is fast being discarded with. The Small rice mills are the most predominant of the three processing systems. They can be found in major rice processing areas such as Abakaliki in Ebonyi state, Lafia in Nasarawa state and a host of others. Personal discussions with rice experts reveal that about 85 percent of Nigerian rice is processed through the small milling system.

At the moment, most small rice mills operate at about 1 ton/hr. This is due to the lack of availability of sufficient paddy for processing. Some of the millers go far away to look for paddy to buy and sometimes they even go beyond the shores of the country in search of paddy.

The final product of the small mills is generally superior to that processed under the traditional hand-pounding system. In some cases however, the final product contains a high percentage of broken grains and thus fetches a lower price in the market. The small milling units perform both hulling and milling operations. Usually, milling is done for a fee. In July 2001, the milling fee was N2000/ton at Lafia in Nasarawa state.

In Nigeria, few large mills exist and most of these mills are owned by government or quasi-government parastatals such as the State Agricultural Development Projects. However, most of 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.

#### **4.1.2 Profitability of Rice Processing**

There are a few studies on the profitability of rice processing in Nigeria. These studies are however restrictive in the sense that they do not compare the profitability of rice processing in the various regions of Nigeria. Nonetheless, the profitability of rice processing activities in Nigeria is analyzed by Aderibigbe (1997). The study found rice processing profitable although net returns per month varied among respondents. In addition, the study found that the unit net returns to processing activities increased with quantity of rice processed. This suggests that millers were achieving economies of scale in their rice processing operations and therefore should increase their levels of operations.

### **4.2 Rice Marketing**

Rice marketing includes the marketing of imported and local rice (see Ihene, 1996 and Aderibigbe, 1997).

#### **4.2.1 Marketing of Imported Rice**

The marketing of imported rice in Nigeria has undergone three major phases. The first phase was characterized by the marketing of imported rice solely by the private sector. A major problem of this phase however was the uncoordinated pattern of rice importation and distribution. This resulted in uncontrollable and haphazard pricing of rice throughout the country. The second phase was typified by direct government intervention (see Oni and Ikpi, 1979). During the third phase commencing after the lifting of the ban on rice importation in 1995, the importation, distribution and sale of imported rice was handled by the private sector.

#### **4.2.2 Marketing of Local Rice**

The marketing of locally milled rice in Nigeria has undergone three phases. During the first phase terminating in 1976, the marketing of locally milled rice was undertaken by private individuals. But during the second phase commencing 1977, a limited form of government participation in the marketing of rice and other cereals was introduced through the establishment of the Nigerian Grains Board. The board purchased milled and paddy rice directly from farmers and provided storage such that rice could be available in the market during non harvest periods. In the third phase commencing in 1986, private individuals were in full charge of the marketing of locally produced rice.

#### **4.2.3 Marketing Margin**

There have been few detailed marketing studies done in the south since those in the 1980s supervised by Jones in the south west (Thodey, 1968) and the south east (Witney, 1968). Olayemi

(1972) found a retailer marketing margin of about 6-10% while the wholesaler got about 15-24% margin. In Ibezim (1985) study, estimated marketing returns amounted to 47%. Wholesalers and retailers achieved the highest marketing returns of approximately 20% of the consumer price each. In the study by Itheme (1996), marketing margins for rice was put at 16% while that of maize was 14%.

## **5 Policy environment and rice sector development**

### ***5.1 Changes and sequence in the policy environment***

From an historical perspective, Nigeria's rice policy can be discussed in reference to three important periods (Figure 11). These are the pre-ban, ban and post-ban periods. These periods are critical as a result of the fact that the kind of policies put in place during these periods had profound impact on the rice economy.

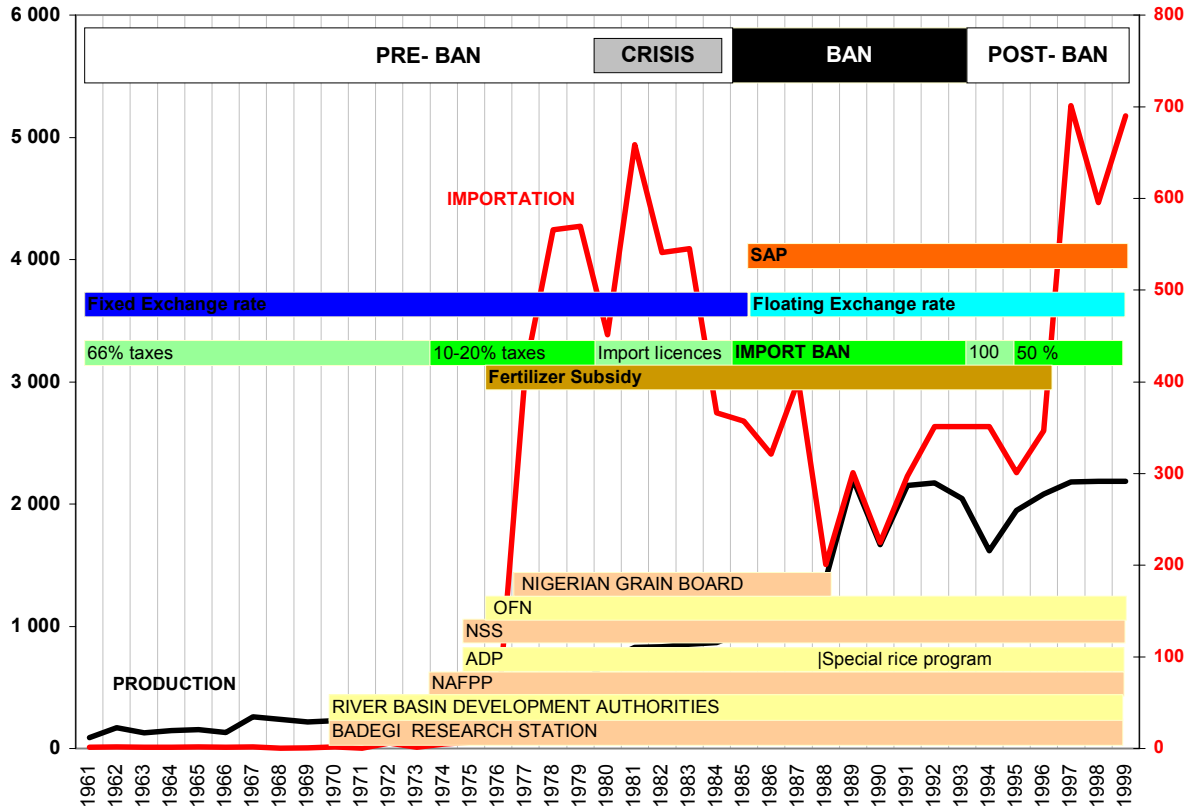
The pre-ban period is the era prior to the introduction of absolute quantitative restriction on rice imports (i.e., 1971-1985). This epoch can also be classified in two – the pre-crisis (1971-1980) and the crisis period (1981-1985). The pre-crisis period was largely characterized by liberal policies on rice imports though ad hoc policies were put in place during times of interim shortages. It corresponds to the launching of various programs and projects aiming at developing the rice production. During the crisis period, more stringent policies were put in place, though outright ban was not a major feature.

In the ban period (i.e., 1986-1995), it was illegal to import rice into the country though illegal importation of the commodity through the country's porous borders thrived during this period. In the post-ban period (1995 – date), quantitative restrictions on rice importation were lifted while the country generally adopted a more liberal trade policy towards rice.

Analysis of the effect of trade policy on rice production in Nigeria indicates that prior to the major crisis in rice production (i.e. 1971-1980), the average annual growth in rice output was 27%. However, this plunged to 4% during the 1981-85 period, a period when Nigeria relied considerably on rice importation. Nigeria imposed a ban on rice imports during the 1986-95 period. During this period, the average annual growth in rice production skyrocketed to 13%. But after the removal of the ban in 1995, the average annual growth dived to -1%. This tends to suggest a positive correspondence between government trade policies and rice production in Nigeria, conjecturing that rice farmers do indeed respond to government trade policies (especially the ban) on rice imports by increasing their output. If this is the case, the critical question then is, what was the channel through which trade policy affected domestic rice output during this period under observation? Was it through a reduction in imports or through a rise in the price of imported rice vis-à-vis local rice which then compelled Nigerians to purchase local rice? The imposition of a ban on rice imports is expected to result in decline in rice import. Rising demand for the limited imported rice available should result in an upward review in the price of the commodity. Even increased smuggling activities are not likely to keep the price of imported rice at its level before the ban. The increase in price of imported rice is envisaged to result in increased demand for local rice. Increased demand for local rice should lead to a rise in the price of the commodity which serves as an incentive for increased production of the product. Available information tends to suggest that changes in the growth in producers' prices of rice could have

contributed to the changes observed in the growth in rice production as improvement in the growth in prices of rice during the ban period was associated with an improvement in the growth in rice output while a considerable decline in producer prices of rice after the ban was lifted in 1995 was followed by a plummeting in the output of rice.

Figure 11 Nigerian Rice policy sequence



## 5.2 Rice development programs

Attention was not focused on rice during the pre colonial and colonial period. During this period, focus was rather on those export crops that could generate foreign exchange earnings to the colonial government. As a food crop, rice was comparatively less favoured than export crops such as cocoa, groundnut, rubber and palm produce. Thus, while export crops were supported through pricing and marketing board policies, rice and other food crops were left to develop at their own pace with no incentive.

However, a number of rice development programs were put in place after independence. These include the establishment of the Federal Rice Research Station (FRRS) at Badeggi in 1970 by the federal government which later metamorphosed into the National Cereals Research Institute (NCRI) in 1974 (see WARDA, 1981). The National Seed Service (NSS) was established in 1975 with the assistance of the Food and Agricultural Organization, with the mandate of effectively coordinating seed production and certification for rice, maize, wheat, sorghum and millet



throughout the country. The Operation Feed the Nation (OFN) of 1976 also impacted rice production in the country as the program brought with it agricultural based incentives such as the introduction of subsidy on land clearing, seed and fertilizer supply, credit and mechanization. Unfortunately, the program made very little impact on food supply because it was directed at the wrong people. The subsidies went to a few elite while the peasant farmers who produce the bulk of the food eaten in the country were mostly neglected. A number of rice farmers who responded by increasing hectare devoted to the crop especially in Abakaliki area of the eastern states were not able to sell their produce due to the massive importation of cheaper and better quality rice during the 1977/78, a period when the tariff imposed on the commodity was lowest (10%). The River Basin Development Authorities (RBDA) conceived in 1970 would have contributed greatly to the development of irrigated rice production in the country. However, government policy in this direction was highly inconsistent. The Agricultural Development Projects (ADP) were saddled with the responsibilities of improved technology (and the means to get it to farmers), increased supplies of farming inputs (especially fertilizer), and extensive infrastructure improvements (especially rural roads and water supplies). The ADPs have been a major channel through which government policies on rice production were implemented. Though still in operation, activities of the ADPs have been drastically scaled down owing to the non-availability of funds for operation. It should be noted that the World Bank, a major financier of the project, has withdrawn its financial commitments. This has provoked debates on the future of the ADPs..

### **5.3 *Macro- and sectoral policy***

#### **5.3.1 Trade policy**

Nigeria has employed various trade policy instruments such as tariff, import restrictions, and outright ban on rice import during the period of investigation. During the 1970s and early 1980s, trade policy instruments included tariffs. However, in 1985, rice import was banned for a decade. The lifting of the ban was effected in 1995. Since 1995, the government has been employing tariff measures in regards to rice importation. Tariff on rice imports has increased from 50% during the 1996 – 1999 period to 85% in 2001.

#### **5.3.2 Exchange Rate Policy**

Before the introduction of SAP, exchange rate and foreign exchange allocation policies acted as a major source of price distortion and disincentive towards farming enterprises. Previous Nigerian governments had pursued exchange rate policies that kept nominal exchange rate constant, even in the face of widening and divergence between rising domestic inflation and relatively stable international price level. The extent of over-valuation of the local currency was put at 100% between 1970 and 1975; 200% between 1976 and 1979 and about 700-900% during the 1980-85 period (CBN/NISER, 1992).

The consequence of the over-valued exchange rates altered the competitiveness and profitability of farm business in favor of other activities. With regards to imports (including rice), exchange rate over-valuation helped to cheapen imports of competing food items. The situation was exacerbated by the liberal food imports policy, especially during the 1970-77 when there was little or no tariff on imported food items. This fostered the rapid expansion in the importation of these goods (especially rice) to the detriment of local production of similar goods. Until 1981/82 when import restrictions were imposed, farmers producing staple food crops such as rice were

actually subsidizing domestic consumers. The exchange rate devaluation, resulting from the implementation of SAP in Nigeria has resulted in dramatic increase in the naira price of imported food items and this was expected to discourage importation of foreign food items, by raising the level of effective protection for domestic production. However, the anticipated increase in rice production may be elusive given the skyrocketing prices of agricultural inputs. This is because most of the inputs employed in rice production are imported.

### **5.3.3 Fertilizer Policy**

Nigeria has been largely an importer of fertilizer. Prior to 1976, fertilizer procurement and distribution were handled by the states. But in order to boost agricultural production, the federal government took this responsibility off the states and introduced fertilizer subsidy in 1976. When SAP was introduced in 1986, government began a gradual deregulation of fertilizer trade. This was partly a follow-up to the widespread malpractice in the distribution of fertilizer especially during the 1980s and early 1990s. Subsidy on fertilizer was completely removed in 1997 before the inauguration of the democratic government in May 1999. After the inauguration, however, the federal government re-introduced fertilizer subsidy to the tune of 25% in 1999. After six months of experimentation with fertilizer subsidy, the government had a rethink on the issue of fertilizer subsidy in particular and agricultural subsidy in general. Thus, in February 2000, government completely liberalized procurement, trade and distribution of agricultural inputs including fertilizer in Nigeria. By this policy, the federal government disengaged totally from the procurement and distribution of agricultural inputs, especially fertilizer. The authority to import agricultural inputs including fertilizer became vested in the hands of private individuals and firms. In addition, duty on imports of agricultural machinery, spare parts and animal husbandry were slashed. Furthermore, the value added tax (VAT) on sale of agricultural inputs was abolished. But in April 2001, government reintroduced fertilizer subsidy to the tune of 25% in 2001 (Mosadomi and Humbe, 2001). This amounts to about N3.5bn (Post Express, 2001).

What can be deduced from the above discussions is that apart from the diversion of fertilizer subsidy to unintended beneficiaries, government policy on the input has been very inconsistent.

### **5.3.4 Land Policy**

The importance of land to agricultural sector cannot be overemphasized. Land is the most primary natural resource of any nation, and on or under it lies all other resources that sustain the nation. In Nigeria, land provides the source of livelihood to about 90 percent of its population. Before 1975, when contributions of agriculture to GDP were consistently declining, experts observed that peasant agriculture was “the problem” to increased agricultural output. To remedy the situation, the land use decree was promulgated on March 29, 1978. This land decree did not alter the Northern region traditional land tenure system but changed the system that operated in the East and Western regions. The ownership of land in each state was vested in the state governments in trust for the people of the state. Through the land use decree, highly placed and influential government officials were able to acquire lands from their rightful owners at little or no cost thereby dispossessing peasant farmers of their land.

## **6 Conclusion & discussion**

The present review has highlighted that a comprehensive overview of the rice economy was still missing – both in terms of its temporal and spatial dimensions. Nigeria is vast, diverse and dynamic with a multitude of agricultural and economic activities. Within this complexity, most studies tend to focus on particular systems or regions. Although the focus allows for more detail, there is a danger of losing the bigger picture.

The present review also highlights that a wealth of information already exists. However, it appears that the existing information is not fully exploited. In part, this seems to be related to unawareness and difficult accessibility. Another issue is different data collection methods used. Often it is difficult to assess the reliability of information (Is it an anecdote or fact?). This is particularly an issue as information from different sources often conflicts. Still, an additional effort is warranted to make better use of existing knowledge.

The Nigerian rice economy has seen some major changes in the political setting such as the lifting of the import ban in 1995. This change has major implications – yet still is relatively recent with only a limited post-ban period. This implies that for now only limited and partial information is available as not all effects have been documented or have fully materialized. Further scrutiny and monitoring of the implications under new setting is warranted – particularly in terms of documenting the effects of the ban; the dynamics; who gains and who loses.

In view of the ongoing changes in the socio-economic setting there is a need to regularly update the assessments of comparative advantage among crops, by location, by ecosystem and by technological option.

There is a need to assess the viability of irrigated systems. Substantial investments have been made by the public sector in large scale irrigation schemes which were primarily intended for rice production. Given the retrenchment of the public sector, how can Nigeria make best use of these sunk costs? Another issue revolves around the viability of small scale irrigation schemes – amongst others in terms of investment, maintenance and operational costs. Can irrigated rice compete in a more liberal environment?

Input use also merits further attention. Fertilizer has long been a highly political input – with varying degrees of subsidy. It remains unclear though how subsidy rates affected actual fertilizer use by farmers – for instance in terms of use rates and availability. Still, fertilizer use appears relatively widespread on cereals such as rice in Nigeria compared to other West African countries.

Indeed, the current review has highlighted a number of policy issues. First and foremost, there appears to be no clear policy strategy. The policy environment as it affects the rice economy is inconsistent and typically based on short term views. Indeed, institutional memory seems short and many policies reactive instead of proactive.

The impression exists that often there is no real analysis of situation. As a consequence, no clear policy position is taken – for instance in terms of how to develop the rice economy. A prime example is the import ban. It has been removed since 1995 – but there are no clear-cut answers to the question why it was removed. Are other development measures of the rice economy justified and viable?

Another prime example of limited analysis is rice consumption. Why is local rice not well accepted? Who actually consumes the imported rice and why? The current review has seen much anecdotal evidence but no comprehensive analysis rice market so far.

The above elements also explain why some stakeholders maintain their old view. Many still seem to share the ideal of self-sufficiency in rice, and possibly even exporting rice. However, a real analysis could allow valuable lessons to be learned and provide arguments and facts to defend a particular policy position.

The current review of the literature on Nigeria's rice economy thereby raises a number of issues. Indeed, numerous information gaps have been identified which require further research. Some of the illustrative questions that remain are mentioned hereunder.

### **Production**

- What is the current comparative advantage of the various states that produce rice?
- What is the level of state government involvement (directly and indirectly) in rice production?
- What is the relative profitability of rice production vis-à-vis other food crops?

### **Consumption**

- What is the share of rice expenditure in total household expenditure?
- What is the level of rice consumption?
- What is the rice preference of Nigerians – imported or local and, what factors account for this?

### **Processing**

- What kind of processing technologies are in use?
- What is the profitability of utilization of these technologies?
- What factors hinder the adoption of modern technologies?
- Is there sufficient reward for quality?

### **Marketing**

- What are the various channels of rice distribution in Nigeria?

### **Input**

- What is the level of involvement of state governments in input production and procurement?
- What role can government play in the production of rice inputs?
- How can the private sector be encouraged in rice input production?

### **Organization**

- Why is there no rice farmers and millers association at the national level?
- How can such association be formed?
- What roles can the association play in the production and procurement of inputs for its members

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