

Making Fertilizer Available to Small-Scale Farmers: Rural Development Policy Options for Nigeria

D.O. CHIKWENDU AND M.A. OMOTAYO*

An efficient and effective fertilizer distribution system is a declared objective of the Federal Government of Nigeria. Different methods of fertilizer distribution based on the public distribution system have therefore been tried in the country. However, these methods have proved ineffective in getting the right types and quantity of fertilizers to farmers at the right time needed, in the right places and at affordable prices. This paper reviews the fertilizer distribution systems of the country, highlights the problems with the distribution arrangements and suggests measures to make fertilizer distribution more effective. The present system could be modified to improve the indigences of each state in fertilizer transportation. Another option is to privatize the whole process by allowing private sector participation in fertilizer procurement and distribution.

Introduction

The promotion of fertilizer use is considered as a major agricultural policy by most African Countries. Fertilizer use has a strategic role in agricultural development not only because it contributes to higher yields, but also it goes with innovations such as improved seeds and better management (Abbott 1973). It can rightly be regarded as a spearhead of rural development.

The first recorded recognition of the potential value of inorganic fertilizer in Nigeria was in 1937 when it was reported that superphosphate fertilizer applied to cereal crops gave yield increases comparable to what was obtained from farm-yard manure of similar phosphate content (Yayock *et al.* 1980). Fertilizer consumption has increased rapidly over the years. It rose from a yearly average of 3,157.4 metric tons of nutrients between 1953-1957 to 1,068,492 in 1988-1990 (Figure 1). Despite the serious economic problems in Nigeria and scarcity of foreign exchange, the government has continued to make fund available for fertilizer procurement and their price subsidization. Yet the level of fertilizer consumption is still very low at about 23 kilogram per hectare of total nutrients. In the whole of sub-Saharan African Countries, the consumption level averages only 9 kilogram of nutrients as compared with 121.3 kilogram of nutrients for the developed countries (IFDC 1990).

*Program Leader, Planning and Evaluation Program, and Extension Specialist, Rural Youth Program, Ahmadu Bello University, Zaria, Nigeria.

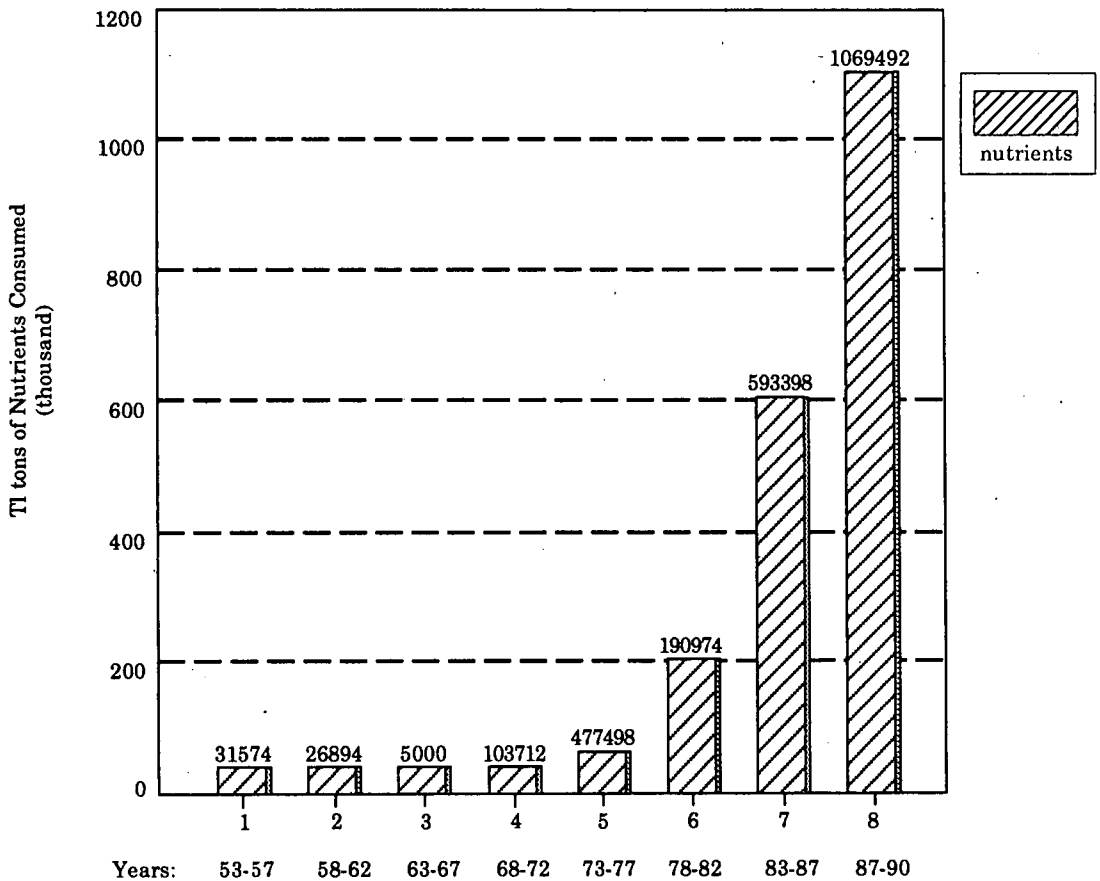


Figure: Average Fertilizer Consumption in Nigeria (Metric tons of total Nutrients) 1953 - 1990.

Most of the fertilizer consumed in many African Countries are imported. In Nigeria, about 53 percent of the fertilizers used in 1990 cropping season were imported while 47 percent was sourced locally. The local sources are: The Federal Superphosphate Fertilizer Company in Kaduna; National Fertilizer Company in Nigeria, Onne, River State; Fertilizer and Chemical Plant in Kaduna; Morris Nigeria Limited in Minna; Kano State Supply Company (KASCO) - a bulk blending plant; and Agro Nutrients Limited also in Kaduna.

The policy objectives of the fertilizer marketing and distribution in Nigeria are:

- (1) to maximize distribution efficiency and reduce cost;
- (2) to make fertilizer available in the right kind, place, quantity, cost, and time.

However, as many studies have shown (Falusi and Adubifa 1975; Shepherd 1987; Chikwendu 1992), one of the major constraints to increased fertilizer use is the ineffective marketing and distribution system. In fact, it is the poor distribution system that tends to undermine government's effort of delivering the right types of fertilizers to the farmers at the right places, at the right time, in the right quantity and at affordable prices.

This article discusses the systems of fertilizer distribution in Nigeria, highlights the problems with the system and then discusses some essential policy issues for improving the situation.

How Fertilizers Reach the Small-Scale Farmers in Nigeria

Different systems of fertilizer distribution have been practiced in the country. Between 1950 to 1975, it was the responsibility of each State Ministry of Agriculture to procure fertilizers and distribute them to the farmers. The contracted private importers deliver the fertilizers to the state central warehouse. Under this system, the extension staff, the cooperatives, licensed buying agents and traders acted as sales agents.

However, due to numerous problems encountered under this system, the Federal Government established in 1976 a central body for fertilizer procurement. This body is the Fertilizer Procurement and Distribution Division (FPDD) under the Federal Ministry of Agriculture. Thus, between 1976 to 1990, FPDD coordinated fertilizer procurement and distribution to states. Procurement was based on requirements from the states. It was the duty of each state government to transport their consignment to their desired destinations. Apart from state governments, some other government agencies were also involved in fertilizer distribution. In 1990, through the edicts promulgated by state governments, it became illegal for private dealers to sell fertilizers. Within the states, various outlets were used to bring the fertilizers to the farmers. These include the use of Agricultural Development Project (ADP), local government councils, traditional rulers and cooperative groups. Each year, new outlets were introduced. However, all these efforts have not helped to improve the situation. The involvement of FPDD in fertilizer procurement and distribution did not help to solve the problems of fertilizer distribution either.

A new policy on fertilizer procurement and distribution was introduced by the Federal Government in 1991. Under the new policy, a committee on fertilizer made up of four bodies was set up at the federal level. The bodies are: Federal Ministry of Agriculture and Natural Resources, National Fertilizer Company of Nigeria Limited (NAFCON), Ministries of Finance and Economic Development and Budget and Planning. This committee is to determine the quantities to be allocated to each state. An evidence of the weakness in the current distribution system is shown in Table 1.

Table 1. Proportion of Fertilizer (volume) Purchased by Source, (%)

States	1989		1990	
	Authorized Source	Unauthorized Source	Authorized Source	Unauthorized Source
Imo	76.47	23.53	87.35	12.65
Borno	29.44	70.56	15.11	84.89
Kaduna	51.70	48.30	19.27	80.73
Niger	73.73	26.27	67.25	26.27
Oyo	84.24	15.76	100.00	-

Source: Chikwendu, *et al.* 1992.

During the 1989 and 1990 seasons, the legal outlets of fertilizer included the state Agricultural Development Project (through the farmers supply company), the cooperative groups, local government councils, and Better Life Program. However, a good percentage of fertilizers came through the illegal source - the open market. Figures in Table 1 show that the situation was worst in Kaduna and Borno States, where during the 1990 season, as much as 80.73 and 84.89 percent respectively came through the illegal dealers.

Although fertilizer is supposed to be sold at fixed subsidized rates, most farmers pay prices far above the government rates. Figures in Table 2 show wide price differentials between the prices paid by the farmers and the government fixed rates. The figures show that in 1990 season, when the government fixed price for the high nutrient types (NPK all types, DAP and Urea) was ₦20.00 per 50 kg. bag and ₦17 per 50 kg. bag of low nutrient types (BSP, SSP, CAN, MOP, etc.), the farmers on the average paid prices

above the fixed rate. In Kaduna and Borno States, the difference in price was by 106.70 percent and 93.25 percent higher than the government rate. The above illustration is another evidence of the weakness in the current distribution arrangements; and it convinces us that many farmers in Nigeria are not benefiting from the government subsidy on fertilizer.

Table 2. Average Prices Paid by Farmers for a 50kg. bag of Fertilizer (₦), 1989-1990

State	1989	1990
Imo	19.39	25.95
Borno	31.64	38.65
Kaduna	35.66	41.34
Niger	26.47	25.48
Oyo	19.76	20.00

(1) Source: Chikwendu, *et al.* 1992.

(2) Government approved prices for the high nutrient types of fertilizer were ₦15.00 and ₦10.00 in 1989. While in 1990 the rates were ₦20.00 and ₦17.00.

Problems with Fertilizer Distribution

The problems encountered at the early stages of fertilizer use in the country are discussed by Wells, *et al.* (1975), Falusi and Aduhifa (1975), and Sodangi (1981). The distribution problems encountered are listed below: transportation bottlenecks; lack of proper stock control; diversion of extension staff from their primary duties; poor incentive to private agents in the retail trade and lack of credit facilities. The problems associated with fertilizer procurement are as follows: late awards of tenders; late arrival of fertilizers; port congestion; delayed evacuation and transportation bottlenecks due to unphased deliveries.

On the other hand, the problems encountered under the current fertilizer distribution arrangements are discussed by Shepherd (1987), Chikwendu and Giwa (1992), and Chikwendu (1992). The authors pointed out that the present state monopoly in fertilizer sales and lack of competition seem to be the main source of problems in the current distribution system. Fertilizers are usually not supplied to the distribution points at the right time. Because of this, farmers have to leave their farm work and make multiple trips to distant

places in search of a few bags of fertilizer; in most cases they do not succeed in getting any to buy. Some other problems and difficulties are discussed below:

(1) Fertilizers supplied each year to distribution outlets are usually inadequate. This is caused by two factors: first, the government does not have a correct estimate of how many hectares of land are under cultivation and what crops are being cultivated. In addition, tests are not usually carried out to know the nutrient requirements of the soil. Second, government does not have enough fund to procure the required quantity of fertilizer. The inadequacy of fund can be explained in terms of the high level of subsidy which the government still maintains.

(2) Chikwendu (1992) pointed out that the existence of subsidy not only puts a lot of pressure on the treasury but also stands as a barrier to private sector participation in the distribution process. Between 1950 to 1975, when procurement and distribution of fertilizers were administratively and financially the responsibility of each state government, the level of subsidy was determined by each state government which led to price differentials all over the country leading to speculative trade (Sodangi 1981; Ogunfowora 1983). With the establishment of the FPDD in 1976, a nationally coordinated fertilizer subsidy existed, hence a uniform price level was introduced. Between 1976 and 1977 to 1978 and 1979, fertilizer importation, port clearance and transportation to states' warehouses were subsidized by 75 percent by the Federal Government while the remaining 25 percent was paid by farmers. The states bore the cost of intra-state distribution. At this time, the retail price of a 50 kg. bag of fertilizer varied between ₱ 2.50 and ₱ 4.00. From 1980 to 1983, fertilizer subsidy became the responsibility of both Federal and state governments. The Federal Government became responsible for only 50 percent while states bore 25 percent of the subsidy in addition to internal distribution from zonal depots to final consumers.

With the World Bank involvement in funding of fertilizer between 1984 to 1986, the bank insisted that the subsidy be removed by 1998. Thus, in 1984 and 1985, subsidy withdrawal was made. It was reduced from 75 percent in 1983 to 35 percent in 1985 (Table 3). It however went up to 71 percent by December 1986. Since then, the level of subsidy has risen to as high as 85 percent in 1989 and 87 percent in 1990. This sharp rise in subsidy level from 35 percent in 1985 to 87 percent in 1990 may be explained by the ever depreciating value of the Naira, increase in world market price and rise in the local haulage cost. Although the maintenance of fertilizer subsidy has led to increase in fertilizer utilization rate by farmers, it has brought with it a great finance burden to the government. In Table 3, the quantities and treasury cost of fertilizer procurement and subsidy are indicated. Figures in Table 3 show that the total cost of fertilizer procurement and distribution

to the Federal Government rose from ₦82.703 million in 1983 to ₦2,071.407 million in 1990. This represents an increase of about 1404 percent. All this indicate that a great amount of money is used in fertilizer procurement which means that the amount of subsidy is very high. This great burden on the government can be appreciated more if one recalls the poor state of the economy.

Table 3. Estimated Total Cost of Fertilizer Procurement to the Federal Government (1983-1990)

	1983	1984	1985	1986	1987	1988	1989	1990
Average Procurement and Distribution Cost (N/T)	212.65	111.81	139.97	638.64	896.61	890.26	1,047	2,241
Total Quantity Fertilizer Distributed ('000 Tons)	518.55	763.00	1,163.03	574.62	621.99	987.47	912.00	1,062.44
Estimated Total Cost (N'M)	110.270	85.311	162.789	366.975	557.371	879.105	954.864	2,380.928
Federal Government Subsidy Level (%)	75	50	35	71	78	80	85	87
Estimated total cost to the Government (N'M)	82.703	42.655	56.976	260.552	434.749	703.284	641.634	2,071.407

Source: Chikwendu 1992

(3) Another factor responsible for the inefficiencies in fertilizer distribution is the fact that little attention is paid to its retail marketing. The use of local government councils and traditional rulers in fertilizer marketing, in the long run, may be a danger to food security of the country. In the country where open ballot system is used to elect local councilors and governors to their post, there is a possibility that fertilizers would be allocated only to a particular political party adherents. Traditional rulers also have their loyalists and opponents. There is a danger that they may not sell fertilizers to the opponents. In some states, there is a government pronouncement that fertilizers are sold only to those farmers who produce evidence of having registered to vote in the elections. Other means of getting farmers to perform their civic responsibilities should be explored.

(4) Chikwendu *et al.* (1992) reported that majority of farmers travel as much as 10 km. and even more to buy a few bags of fertilizer. In Kaduna

State for example, the mean price paid by the farmer on fertilizer transportation was ₦ 5.00 per 50 kg. bag. This situation does not only frustrate the farmer but will probably create condition for unfavorable value cost ratio, hence discouraging increased fertilizer use.

(5) A recent experience in fertilizer transportation is that some fertilizer consignments intended for some states do not always reach them. There have been reports that some of the consignments are smuggled across the borders of the country and that some truck owners employed to haul the goods at times deliberately withhold them (Chikwendu 1992). This condition causes unnecessary scarcity of fertilizer.

Policy Options and Strategies

A number of methods have been tried in recent times for the distribution of fertilizer in Nigeria. Presently, primary transportation of fertilizer from factory/port to the states is contracted to truck owners. However, there have been frequent cases of missing consignment in transit. Some of the reasons adduced for such losses are:

- (1) Use of haulage contractors who are not indigenes of the states;
- (2) Confiscation of consignment by contractors in lieu of payment for haulage by the government; and
- (3) Outright dishonesty on the part of contractors with active connivance of government officials.

If the government must continue to participate in fertilizer distribution, the following issues must be considered:

- (1) Government should always fulfill all financial contractual obligations to haulage contractors on a timely basis.
- (2) Government should consider using contractors who are indigenes of the states and who are well known to the people. The agreements reached between the contractors and the government should be made public and contractors should be made accountable to the people.

This method though has its limitations. One is that the current bureaucratic bottlenecks that normally hinder government decisions will still prevail. Another limitation is that there is no assurance that the government will honor its financial obligations to contractors on a timely basis. This method does not also give attention to fertilizer retailing to the farmers.

(1) The essential policies and strategies for efficient fertilizer marketing and distribution system must therefore revolve around making the marketing and distribution system more competitive. This does not necessarily mean that government should not participate in the process but it should ask for private sector and cooperatives participation in fertilizer procurement, marketing, and distribution. An attempt at this had earlier been contemplated when the Fertilizer and Agricultural Input Marketing Company (FAIMCO) was to be formed. However, the move was opened at the National Council of Agriculture (NCA) in 1986. There were reservations that such a company will not be efficient and that it was generally incompatible with the administration of subsidy. This is not necessarily so. Countries like India, Indonesia, Malaysia, and Bangladesh moved away from government-run fertilizer marketing systems and still maintained fertilizer subsidy in the range of 20 to 52 percent. In some sub-saharian African countries like Kenya and Zimbabwe where some level of competition have been allowed, there has been some progress in making fertilizers available to farmers when needed. Presently in Nigeria, there are no direct subsidies on fertilizer. Fertilizer operates under an equalization fund under which cheaper raw materials subsidize the expensive ones. In 1983 to 1984, the rate of fertilizer use per hectare was as high as 60 kg/ha (FIAC 1986b). The aforementioned buttresses the point that private sector should be allowed to participate in the process. Since the government does not have enough fund to procure the right quantities of fertilizer needed in the country, private sector should be allowed to import a specific quantity and types of fertilizer.

(2) Central to improved fertilizer marketing and distribution is the issue of procuring adequate quantity of fertilizer. In Nigeria where demand estimation is not based on accurate data, it is difficult to know the quantity of fertilizer needed in the country. There is therefore a need for a bench mark study to be conducted by the National Fertilizer Centre to estimate the fertilizer needs of the country. This will involve a knowledge of the area under cultivation and the types of crop grown. With the right estimates made by the National Fertilizer Centre, private dealers should be made to forward estimates of what they can procure and sell. If there is still a shortfall, the government will then fill the gap. Fertilizer procurement should start early in the year and each importer must have adequate storage facilities which must be located at different parts of the country to ensure effective distribution.

(3) Adequate infrastructure must be provided in the rural areas to ensure that private dealers are not discouraged from taking fertilizer to the hinterlands. New feeder roads should be constructed and existing ones be maintained to ensure that they are in good condition throughout the year. The availability of good roads will go a long way in reducing the time spent by farmers in search of fertilizer and it will also reduce cost of procurement.

(4) For the private sector to participate fully in fertilizer marketing and distribution, there is a need to address the issues of subsidy and pan-territorial pricing of fertilizer. The continued maintenance of high level of subsidy serves as a disincentive to private participation in fertilizer marketing. On the other hand, a sudden withdrawal of subsidy may probably lead to reduced demand and may make private sector lose interest in fertilizer marketing. It is therefore necessary that a certain level of subsidy be maintained. For instance, a sort of import subsidy could be given to importers and a production subsidy to the local factories and plants. These subsidies would eventually be transmitted to farmers. Subsidy withdrawal should be phased in such a manner that it will not have sudden impact on fertilizer demand.

Inasmuch as competition can still accommodate some level of subsidy, it is inappropriate to continue with the pan-territorial pricing policy currently being practiced in the country. There will certainly be no incentive for a private dealer to transport fertilizer from Onne in Rivers State to Sokoto (a distance of about 1400 kilometers) if they are to receive the same price as they would if they sold the fertilizers in Rivers State. Thus, consideration should be given to the introduction of a variable pricing system involving different prices at different locations depending on their distance from the depots or factory. Funds previously used on transportation subsidy could be used to construct and maintain the roads to rural areas; and can also be used to maintain the country's inland water ways. Government must ensure to announce prices of different types of fertilizer early before the planting season.

(5) Inadequacy of fund may be a constraint to private sector participation in fertilizer procurement and distribution. The private dealers will need fund to build storage facilities in different locations in the country. Thus, in the initial stages of making fertilizer distribution more competitive, a policy should be worked out which will provide adequate credit facilities to the dealers.

(6) Fertilizers are mostly transported by road neglecting inland water ways and the railway. Transportation of fertilizer is not only very expensive but there are constant breakdowns of vehicles. It is therefore suggested that part of the fund used to subsidize fertilizer transportation should be used to improve the condition of the railway and inland waterways. They must be the major means of transportation when moving fertilizers from the ports/factories to the state depots.

Summary and Conclusion

The present system of fertilizer supply to small-scale farmers in Nigeria is ineffective. The state monopoly in the distribution process has created rooms for unscrupulous elements to smuggle fertilizers outside the country and fertilizers are sold to farmers at prices far above the government fixed rates, thus, preventing many farmers from benefiting from the government subsidy. The government appears unable to prevent fertilizer sales at the "black market." Different options which will help improve the situation are suggested. It is imperative that a new fertilizer delivery system which will make the whole process competitive be adopted. Various strategies which will help to make the process succeed are suggested. This requires private sector participation in the distribution process. The role of the government as Shepherd (1987) observed, will change from direct ownership and management of the system to regulation of private sector to ensure acceptable levels of competition and prices. It is expected that competition will help remove the inefficiency and bureaucracy presently encountered in the distribution process.

References

- Abbott, J.C.
1973 Credit, Input Supply and Marketing. Paper presented at FAO/FINLAND Regional Seminar on Agricultural Credit for Africa, Accra, Ghana, 3-14 December.
- Chiezey, U.F., Yayock, J.Y.
1989 Fertilizer Practices for Cereal and Legume Crops in Nigeria. NAFCON sponsored National Fertilizer Workshop, Kaduna (5-7 June).
- Chikwendu, D.O.
1992 Policy Considerations Towards Effective Farm Input Delivery in Nigeria. In F. Nze, ed. *Development and Public Policy in Nigeria: Futuristic Scenarios*. A.B.U., Zaira: Institute of Administration (In press).
- Chikwendu, D.O. and R.I. Giwa
1992 Effectiveness and Impact of Different Fertilizer Distribution Systems on Production. *Nigerian Journal of Agricultural Extension* 6 (1 & 2).
- Chikwendu, D.O., I.Y. Ilu, and R.I. Giwa
1992 Issues on Fertilizer Marketing and Distribution. Paper presented at the 8th Annual Conference on FAMAN, 24-26 August, Port-Harcourt.

- Falusi, O. and O.A. Adubifa
1975 Economies of Fertilizer Distribution in Nigeria. Report of a Study commissioned by the Federal Department of Agriculture, Lagos.
- Fertilizer Industry Advisory Committee (FIAC)
1986a Fertilizer Marketing in Zambia. A paper prepared for FAO/FIAC *ad hoc* Working Party on Fertilizer Marketing and Credit, Rome.
1986b Fertilizer Marketing in Zimbabwe. A paper prepared for FAO/FIAC *ad hoc* Working Party on Fertilizer Marketing and Credit, Rome.
- International Fertilizer Development Center (IFDC)
1990 Report of First Annual Meeting of the African Fertilizer Trade and Marketing Information Network (AFTMIN).
- Mudahar, M.S. and Kapusta, E.C.
1988 Fertilizer Marketing Systems and Policies in Developing World. Alabama: IFDC.
- Ogunfowora, O.
1983 Fertilizer Loan Project. Final Report.
1987 Fertilizer Policy and Programmes in Nigeria. Proceedings of the National Fertilizer Seminar, Port-Harcourt. 28-30 October.
- Salako, E. A.
1988 Fertilizer Use and Recommendations for Rice, Maize, Sorghum, Cowpea, Soyabeans, Groundnuts and Simple Calculations of Required Fertilizer Materials. Proceedings of AERLS Specialized Crop Production Course for NBL Farm Supervisors and Managers, AERLS, ABU, Zaria.
- Shepherd, A.
1987 Improving Fertilizer Marketing to Small African Farm. Paper prepared for FAO/FIAC *ad hoc* working party on Fertilizer Marketing and Credit. Rome.
- Sodangi, S.I.
1981 Fertilizer Distribution and Use in Nigeria: Problems in the Development of improved consumption. FSFC, Kaduna, Nigeria.
- Wells, J.A., *et al.*
1975 Fertilizer: Some Plant Protection Chemical in Nigeria, A Review, A Recommendation. Final Report.
- Yayock, J.Y. *et al.*
1980 Fertilizers and Their Application to Crops in Nigeria. Fertilizer use series No. 1. FDA, Federal Ministry of Agriculture and Rural Development. December.