

NIGERIAN POLICY ON AGRICULTURAL MECHANIZATION AND LOWLAND DEVELOPMENT: SERIF ACHIEVEMENT STRATEGY

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ABSTRACT

It is a statement of fact that increased food and fibre production is a key issue facing developing countries, especially in the African continent. The main reason being that agricultural growth rate in these countries seriously lags behind their ever increasing population. In addition, there are various natural as well as institutional constraints which mitigate against rapid growth in the agricultural sector. Notably among these are climatic conditions, inadequate and untimely supply of inputs, limited funds and poor technological framework. These issues need to be seriously addressed if the trend must be reversed in the new millennium.

Realizing that self sufficiency in food and fibre production is a major index for assessing a nation's developmental effort, policy makers were convinced that modernization of Nigerian agriculture through introduction and development of *need-based, home grown* agricultural mechanization technologies was the only way out of the log-jam of hunger and want. It was on this premise that NCAM was established in 1974 following the acceptance of the report of a team of experts set up by the Federal Government to advise her on the possible establishment of an agricultural mechanization institution based on its perceived roles elsewhere.

The paper presents the Nigerian government policy on agricultural mechanization, lowland or river basin development as well as rice development strategies and policies and also provides ways of harmonizing all these policies and strategies for the speedy realization of SERIF in Nigeria and Sub-Saharan Africa.

Keywords: Mechanization, policy, lowland, SERIF

INTRODUCTION

In Nigeria, agriculture has remained the largest sector of the economy. It generates employment for about 70% of Nigeria's population and contributes about 40% to the Gross Domestic Product (GDP) with crops accounting for 80%, livestock 13%, forestry 3% and fishery 4%, (Nigeria National report, 2006). It plays significant roles in the nation's economic development. These roles include:

- i. contribution to the country's gross domestic product;
- ii. source of income and decent living for a large proportion of the population;
- iii. provision of adequate food for the people;
- iv. supply of raw materials required by the industrial sector;
- v. generation of foreign exchange through export;
- vi. provision of employment opportunities for the teeming population.

Nigeria has a land area of 98.3m hectares. At present about 34m hectares or 48% are under cultivation. Under the (1999) Constitution, responsibility for agricultural and rural development is shared among the federal, state and local governments. There is no doubt that considering the vast area of uncultivated land coupled with the natural fertility of its soil, Nigeria has great agricultural potentials.

The Nigerian rice sector is special within the West Africa context. First, rice is primarily a cash crop in Nigeria (produced primarily for the market). Therefore, in rice producing areas, the enterprise provides employment for more than 80% of the inhabitants in various activities along the production/distribution chain from cultivation to consumption. Some remarkable developments have also taken place in the sector particularly in the last ten years. Both production and consumption have increased during the period, although the increased production

was not sufficient to match the consumption increase, with rice imports making up the shortfall. Because rice is now a structural component of the Nigerian diet and rice imports make an important share of Nigerian agricultural imports, there is considerable political interest in increasing the consumption of local rice. This has made rice a highly political commodity in Nigeria.

It is a statement of fact that increased food and fibre production is a key issue facing developing countries, especially in the African continent. The main reason being that agricultural growth rate in these countries seriously lags behind their ever increasing population. In addition, there are various natural as well as institutional constraints which mitigate against rapid growth in the agricultural sector. Notably among these are climatic conditions, inadequate and untimely supply of inputs, limited funds and poor technological framework. These issues need to be seriously addressed if the trend must be reversed in the new millennium.

2.0 THE NIGERIAN NATIONAL AGRICULTURAL POLICY

Recently, some exciting developments are taking place in the agricultural sector, which should be consolidated. The sector is sustaining the 7% growth rate attained in 2003/2004. This was occasioned by some strategic programmes under the National Agricultural Policy, the National Policy on Integrated Rural Development and the National Economic Empowerment and Development Strategy (NEEDS) which are being vigorously implemented in the various sub sectors within the limits of available resources. This paper will attempt to enumerate some of the experiences and achievements already being recorded under some of these strategic programmes:

2.1 The National Agricultural Policy

In an attempt to tackle the problems facing the Agricultural Sector in Nigeria, Government has put in place the National Agricultural Policy, which was jointly formulated by the national stakeholders and International Development Partners and approved by the Federal Government in 2002. The major components of the National Agricultural Policy feed the National Economic Empowerment and Development Strategy (NEEDS) document. The National Economic Empowerment and Development Strategy (NEEDS) document adequately responds to the demands and strategies of the Millennium Development Goals (MDG).

Specifically, the National Agricultural Policy assigns supportive roles to the government, while investments in the sector are left to the private sector initiative. The broad objectives of the National Agricultural Policy include: Promotion of self-sufficiency in food and raw materials for industries; recognition that agriculture is business, hence a private sector concern where the role of government is to facilitate and support private sector initiatives; promoting reliance on local resources; diversification of the sources of foreign exchange earnings through increased agricultural exports arising from adoption of appropriate technologies in food production and distribution, which specifically responds to the needs of women, bearing in mind that they constitute over 50% of the labor force in agriculture.

2.2 Agricultural Mechanization Policy

Realizing that self-sufficiency in food and fibre production is a major index for assessing a nation's developmental effort, policy makers were convinced that modernization of Nigerian agriculture through introduction and development of need-based, home grown agricultural mechanization technologies was the only way out of the log-jam of hunger and want. It was on this premise that NCAM was established in 1974 following the acceptance of the report of a

team of experts set up by the Federal Government to advise her on the possible establishment of an agricultural mechanization institution based on its perceived roles elsewhere.

2.2.1 NCAM'S Profile

The National Centre for Agricultural Mechanization (NCAM), located at Km. 20 Ilorin- Lokoja Highway, Idofian Kwara state, is a parastatal under the Federal Ministry of Agriculture. The Centre was established as a research and development Centre by Decree (now act of the National Assembly) No. 35 of 1990 with the primary mandate to fast-track the positive transformation of the Nigerian agriculture through the use of appropriate mechanization technologies. This mandate is being achieved through the following specific functions:

- To encourage and engage in adaptive and innovative research towards the development of indigenous machines for farming and processing techniques;
- To design and develop simple and low cost equipment which can be manufactured with local materials, skills and facilities,
- To standardize and certify, in collaboration with the Standards Organization of Nigeria (SON), agricultural machines, equipment and engineering practices in use in Nigeria;
- To bring into focus mechanical technologies and equipment developed by various institutions, agencies or bodies and evaluate their suitability for adoption;
- To assist in the commercialization of proven machines, equipment, tools and techniques;
- To disseminate information on methods and programmes for achieving speedy agricultural mechanization, and

- To provide training facilities by organizing courses and seminars specially designed to ensure sufficiently trained manpower for appropriate mechanization.

2.2.2 Organizational Structures:

The management of NCAM is structured in a hierarchical order headed by an Executive Director who is a renowned Agricultural Engineer. The Centre has five technical departments headed by Assistant Directors where research and development towards Agricultural Mechanization technologies and systems are carried out. The departments are:

- Farm Power and Machinery Engineering
- Land and Water Management Engineering
- Processing and Storage Engineering
- Engineering and Scientific Services and
- Agro-Industrial Development and Extension.

These technical departments are supported by two service departments, namely the Human Resources Department, and the Finance and Accounts Departments.

The Centre, being an Engineering outfit, has over 100 practicing Engineers, technologists, technicians and craftsmen, who are registered with the Council for the Regulation of Engineering in Nigeria (COREN) with such diversified areas of specialization as Agricultural, Mechanical, Production, Electrical/Electronics and Structural Engineering. Most of the Engineers and Scientists have a minimum qualification of Masters Degree in their various fields of study.

2.2.3 Affiliation/Professional Bodies:

NCAM, has the largest single pool of agricultural engineers in Sub-Saharan Africa. The Centre (NCAM) serves as the national secretariat for the Nigerian Institution of Agricultural Engineers (NIAE), and the International Soil Tillage Research Organization (ISTRO). NCAM is affiliated to the following professional bodies:

- Council for Regulation of Engineering in Nigeria (COREN).
- The Nigerian Society of Engineers (NSE).
- West African Society for Agricultural Engineering (WASAE).

The Centre has collaborated with the following international organizations:

- United Nations Development Programme (UNDP).
- Kinki University, Nara, Japan.
- Food and Agriculture Organization (FAO)
- International Fund for Agricultural Development, (IFAD)

2.2.4 Accreditations:

NCAM, being the only agricultural mechanization outfit with her peculiar mandate is not only accredited by the Federal Government of Nigeria but also standardizes, tests and certifies the production and utilization of agricultural machineries, tools, and equipment in Nigeria. The standardization component is done in liaison with the Standards Organization of Nigeria (SON). For instance, all tractors imported into the country, today must be tested and certified by NCAM.

2.3 Rice Policy

Rice production in Nigeria is dominated by small holder farmers with 0.5 - 1.5 hectare per farmer using manual labour for virtually all its operations. Presently over 52 rice varieties with yield potentials of between 2 – 8 tonnes of paddy per hectare and maturity periods of 95 – 140 days had been developed by both National and International Research Institutions. Most of these varieties have been found to be suitable for cultivation in diverse agro ecological zones. Current national demand for rice is estimated at 5.0 million metric tonnes of milled rice while the current production status is estimated at 3.0 metric tonnes leaving a deficit of 2.0 million metric tonnes. Consequently, the country resorted to rice importation to bridge the gap. The national rice import bill was as high as N96 billion in 2002. However, there was a slight decline in rice import bill in the year 2004. The enormity of our national demand, and the need to conserve foreign exchange show clearly that we cannot depend on the level of production by the small holder farmers. Thus, the urgent need to address the production constraints for increasing output to satisfy domestic consumption and even produce for export becomes paramount.

The policy of the Nigerian government since 1979 with respect to an import restriction on rice in the early 1980s and outright ban in 1985 signifies an intention of self-sufficiency.

Prior to the oil boom of the 1970s, the government placed a high tariff on imported rice at about 66%, rice consumption in the 1960s then was about 3 kg per capita and by 1990 had reached 22 kg per capita.

In 1974, the tariff on rice was reduced to 20%, it was further reduced in 1975. This period coupled with the economic situation of a potentially over valued exchange rate led to increased importation of cheaper rice which added a greater incentive for local farmers to switch from rice growing to wade off intense price competition from imports. But during the Nigerian second

republic, the elected government decided to restrict the importation of rice and later in December 1980 introduced the presidential task force on rice. Two months earlier, rice was placed under a general import license. Both systems later became embroiled in controversy.

From 1985 up to 1995, rice was placed under total importation ban. In 1995, a tariff system was re-introduced with a 100% tariff placed on rice. (Wikipedia online encyclopaedia)

2.3.1 Policy Environment

Changes and sequence in the policy environment

From historical, government policy on rice production, importation and distribution can be discussed in reference to three important periods, which are the pre-ban, ban and post-ban periods.

The pre-ban period is the era prior to the introduction of absolute quantitative restriction on rice imports (i.e., 1971-1985), that 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. During the crisis period, more stringent policies were instituted, 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.

During the pre-ban period (i.e., before 1986), government policies had artificially lowered domestic rice and fertilizer prices relative to the world price level. This was achieved through:

- Massive importation of rice between 1975 and 1985 resulting in low price of domestically produced rice.
- Government involvement in the distribution, marketing of the imported rice with nontransfer of actual costs of marketing to consumers but rather absorbed by government.
- Protection of elite urban consumers at the expense of farmers leading to depressed farm gate price, and
- Protection of producers through input subsidies such that actual input costs were not translated into production decision-making process.

The ban on rice importation came into effect in 1985. It was anticipated to stimulate domestic production through increases in the price of the commodity. The introduction of the Structural Adjustment Program (SAP) in 1986 reinforced the ban already placed on rice import. Under SAP, various trade policies were put in place. This was in addition to the depreciation of the naira arising from exchange rate deregulation. The overvalued exchange rate had served as an implicit tax on rice producers as it cheapened imported rice relatively.

2.3.2 Trade Policy

Nigeria has employed various trade policy instruments such as tariff, import restrictions, and outright ban on rice import at various times. During the 1970s and early 1980s, increased export earnings coupled with the highly over valued naira exchange rate made it possible for Nigeria to finance huge food imports. The high naira exchange rate cheapened food imports and consequently helped to depress domestic prices. Large importation of food items especially rice was allowed into the country at relatively cheap prices. This eroded the competitiveness of domestically produced rice and served as major disincentive to rice farmers.

2.3.3 Exchange Rate Policy

Before the introduction of Structural Adjustment Programme (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 gap and divergence between rising domestic inflation and relatively stable international price level. The extent of overvaluation 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 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 overvaluation helped to cheapen imports of competing food items. For example, it was cheaper to import rice for domestic consumption than grow it locally. The situation was exacerbated by the liberal food imports policy, especially during the 1970-77 period when there was little or no tariff on imported food items.

2.3.4 Fiscal Policy

Public spending for agricultural development in Nigeria is undertaken mainly by the Federal and State governments. The range of public sector efforts directed at promoting agricultural development can be classified into (a) direct expenditures of both tiers of government, (b) provision of credit for investment through public agencies, (c) direct credit by the Central Bank of Nigeria, and (d) a wide range of financial incentives and related assistance.

2.3.5 Fertilizer Policy

Nigeria has been largely an importer of fertilizer. Domestic production of fertilizer on a significant scale did not begin until 1987. Subsidy on fertilizer was introduced in 1976. By this, fertilizer which was largely imported by the federal government, was distributed to farmers at prices below the cost of importation. 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%. After six months in February 2000, government completely liberalized procurement, trade and distribution of agricultural inputs including fertilizer. By this policy, the authority to import agricultural inputs including fertilizer became vested in the hands of private individuals and firms, (Daramola, 2005).

2.3.6 National Seed Policy and Seed Development Plan

A policy that stresses the importance of ensuring adequate supply of good quality seeds at affordable prices is currently in place. The major objective of this policy is to provide a framework for future development of the seed sub-sector through:

- Establishment and governmental support of varietal improvement, registration, release and multiplication of released varieties;
- Re-organisation of both the public and private sectors involved in the seed industry; and,
- Encouragement of the private sector participation and take-over by the seed industry.

2.3.7 Land Policy

In Nigeria, land provides the source of livelihood to about 90 percent of its population. This explains why the first law of society was land law.

Prior to the promulgation of the land use decree of 1978, different land law operated among the regions of the federation. In the Northern region, the land belongs to the state. The emirs and chief supervised the use of land and issued out certificates of occupancy. The people have the right to use the land but not to own it. But in the Eastern region there were individually owned small pieces of land. Also, the communal lands were owned by the village, town or clan. The ownership of land in the Western region was a bit similar to that of the East. There were the communal (held on tribal, village, clan or family basis), collective (a group of people buy and share lands) and individual ownership. On the agricultural scene, millions of independent peasant farmers control their land and cultivate crops such as rice and a host of others.

The land use decree was promulgated in 1978. The 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.

2.3.8 International Trade Policies Affecting the Nigerian Domestic Rice Production

There is virtually none. Nigeria is an importing country and may be affected by international trade policies only to the extent that such policies affect countries from which Nigeria imports rice. Nigeria does not have the 'Agreement on Agriculture' reduction commitments. She does not have either regional or bilateral trade agreement that affects rice trade and production.

But as stated earlier, the structural adjustment programme tended to have restored Nigeria's ability to produce rice, having created an environment that made local production somewhat profitable but not fully competitive with imports, (Akande, 2005)

3.0 PROBLEM SOLVING THROUGH SERIF

- i. The present agricultural mechanization level in Nigeria shows that agricultural work done with engine powered technology is estimated at only 3%, hand tools application stands at 90% and animal drawn technology takes 7% (Onwualu and Pawa, 2004). The number of serviceable tractors available nationwide is estimated at 30,000 units. Further actions are therefore required from the Federal government, with the support of development partners, such as JICA, JIRCAS, the World bank to provide incentives for appropriate mechanization intervention.
- ii. Sustainable agricultural production is realized by balanced application at farmers' field of both (1) Varietal improvement through biotechnology and (2) the improvement of rice ecological environment through eco-technology. In comparison to the biotechnological research and technology development, eco-technological research and technology development have been largely neglected in Nigeria and Sub Saharan Africa (SSA) during last 40years. The eco-technological research and development gap has to be bridged.
- iii. Low rice yield despite huge investment in agricultural inputs is a serious issue to be addressed. Thus, the sawah eco-technology is the prerequisite condition to apply the three

green revolution technologies of High Yielding Varieties, Fertilizer and Irrigation successfully.

- iv. There is a wide gap between rice yield on research fields (7-9 ton/ha) and farmers' field (1-2.2 ton/ha) in Nigeria, this is because results of research work in the various national research institutes are not well transferred to the farmers. To address this problem, the Sawah Project can use the Participatory Learning and Action Research (PLAR) as well as Participatory Varietal Selection (PVS) approach to bridge this gap.
- v. Upland ecologies are cultivated at the expense of the forest leaving the lowland under-utilized or undeveloped, a situation which encourages deforestation and consequently contribute to global warming. Lowland development should be the major focus of the Sawah eco-technology project. This will help to combat global warming.

4.0 CONCLUSION

Many a times Nigeria government do not have problem with policy making. Policy implementation as used to be the problem faced, largely because the political will to make them succeed had been lacking or they had been public sector-led. However, the current Presidential Initiative on rice promotes the policy of providing the enabling environment for private sector-led rice production. Rice farmers and processors receive government support through provision of inputs and services at affordable prices as private sector operators. During the administrative of Obasanjo, The Presidential Initiative on Rice Production, Processing and Export layed a solid foundation for sustainable rice production and development in Nigeria. However, a lot still needs to be done in order to make rice production and processing in Nigeria to become internationally competitive especially under zero tariff regimes. There are a few areas that need closer

investigation and attention by policy-makers in order to make the rice sub-sector more competitive.

The areas include; strengthening of the rice processors associations by building their capacities through training on value addition, consumers' preference, packaging etc.

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