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Capitalisation of the Nigerian Agricultural Sector

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Abstract
Rationalising the dismal performance of the Nigerian agricultural sector on the score of low capital contents, a case is made for capital expansion and improvement in the small scale farming sector. Bearing in mind that there are differences in the demographic structures of the Nigerian rural economy, a diversified capitalisation approach is suggested, whereby land-saving would be reserved for thickly populated areas of the country, and the labour-saving type is for sparsely populated areas. The impact of this approach on the employment situation in the country may not be negative, rather, it may re-introduce an era of agriculture-led growth and development.

Introduction

Prior to the attainment of independence in 1960 and up to the early 1970 the Nigerian agricultural sector contributed about 69% to the Gross Domestic Product (GDP), and more than 70% of the population depended on agriculture as a source of employment. Thus the sector has often been described as the mainstay of the Nigerian economy, at least before the oil boom of the 1970s.

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Rightly or wrongly, the acceptance of the orthodox proposition of industrialisation as the engine that propels developmental process coupled with the oil wealth of the 1970s shifted the attention of the Nigerian government away from its core sector (agriculture), thus government policies, strategies and programmes were drawn up to transform the industrial sector of the economy. The glut in the world oil market by the middle of 1981 brought out the in-built clog in the wheel of industrialisation by means of an import substitution strategy, and this was the paucity of foreign exchange, as the foreign earnings of the country declined significantly. Some of the well-articulated problems of the Nigerian agricultural sector are the low physical capital content, nd traditional technology. Hence, this paper views capitalisation of the agricultural sector as an appropriate structural transformation.

Conceptually, capitalisation in this paper is taken to mean improving on the existing stock of farming tools. This may simply involve shifting from the traditional use of hoes and cutlasses to relatively sophisticated farming tools. Areas to be covered would include land preparation, planting, seeds and seedlings, management practices, harvesting and on-farm haulage, processing and storage. Mechanisation would be seen as an element within capitalisation, and this signifies the all-embracing nature of the concept of capitalisation.

The objective of the paper revolves around an examination of the performance of the agricultural sector and past attempts at capitalising the sector, reflecting on their shortcomings. The paper suggests and discuses the prospects of a path of capitalisation and also synthesises the role that the government should play.

In scope, the analysis covers the food and cash-crop sub-sectors of the agricultural sector. Methodologically, the paper relies on theoretical suppositions and generalisations, drawing evidence from previous related studies. The paper is planned, subsequent to this introduction, as follows:

Section II examines the performance of the agricultural sector and makes a case for capitalisation of the sector. Section III reviews the literature with respect to conceptualisation and to processes and issues relating to the employment and income distribution effects of the capitalisation approach to agriculture transformation. Section IV examines agricultural capitalisation in Nigeria in terms of processes, prospects and problems. Section V presents policy recommendations and conclusions.

Performance of the Agricultural sector

Ghatak and Ingersent (1983) identified four areas where the agricultural sector is expected to contribute to the overall growth and development of the economy. Ihimodu (1993) articulated the four areas as follows.

First, the growth of the non-agricultural sector is heavily dependent on domestic agriculture for a sustained increase in food supply and also for the raw materials consumed in the agro-allied manufacturing sector. This is referred to as the product contribution of agriculture. Table 1 shows the share of agriculture in the Nigerian GDP. From the peak of 63% in the early 1960s it declined to 23% in 1975-84 and went up again to more than 30% in 1994.

Period Year Average	Share of Agric. in GDP (%)
1960 – 1964	62.5
1965 – 1969	54.3
1970 – 1974	39.1
1975 – 1979	23.1
1980 – 1984	23.3
1985 – 1989	37.9
1990 – 1994	31.0

Source: CBN, Annual Reports and Statement of Account (Various Issues).

From the angle of the food supply, the volume as well as the value of food imports could be used to gauge how well the sector has performed over the years. Table 2 shows Nigeria's food imports for the period 1962-1994. From

less than 10% in the 1960s, it went up to 18% in the middle of 1980s, declining to about 8% towards the end of the 1980s and early 1990s.

Table 2: Nigeria's Food Import (1962-1994)

Period	Total Import (₦m)	Food (₦m)	Food Import as % of Total
1962-64	443.6	44	9.9
1965-66	531.7	48	9.2
1967-70	399.2	31	7.8
1971-73	1098	103	9.4
1974-76	2690.5	298.1	11.1
1977-80	3104	903.7	11.2
1981-83	9435.3	1586.3	16.8
1984-85	5010.7	891.9	17.8
1986-87	11922.7	2214.5	10.2
1988-89	26153	1970.1	7.2
1990-94	278357.8	24146.3	8.8

Source: CBN, Annual Report and Statement of Accounts

The raw material contribution of the agricultural sector is disappointingly poor. This could be partly explained by the international division of labour that exists between the country and the industrial economies of Europe. This phenomenon is reinforced by the technologies adopted by Nigeria's industrial sector. The lot of the agricultural sector became that of direct linkage with say, the British industries, consigning local industries to importation of raw materials. This situation gave rise to the failure of the country's industrialisation efforts.

Secondly, during the early stage of economic growth the agrarian population constituted a large proportion of the home market for both producer as well as consumer goods. This is known as the market contribution. The ability of the Nigerian agricultural sector to take good care of this role (the ability to provide market contribution) depends on two factors. One is the purchasing power of the sector, which is directly linked with the rate of modernisation of

both the economy and the agricultural sector in particular. A high rate of modernisation is presumed to imply a fast rate of substitution of modern inputs such as tractors, improved seeds and fertilisers among others, for traditional implements like hoes, cutlasses, and traditional seeds. This phenomenon does not seem to have developed in the Nigerian economy. Subsequent to the slow growth of agriculture, the sector's demand for industrial products is highly limited. The second factor seems more important, and this is the question of whether the industrial sector is responding to the demands of agriculture. To claim that the industrial sector has brought within its operation the demands of the agrarian population is not convincing. The reliance on imports by this sector lends credence to this thinking.

Thirdly, since the relative importance of agriculture has declined over the years, following the process of economic growth and development, the sector often serves as the main source of capital for investment in the other sectors of the economy. Therefore, the development process involves the transfer of surplus capital from the agricultural sector to the non-agricultural activities, especially over a long period. This is referred to as the factor contribution.

There are two major sources of factor contribution of the agricultural sector, namely capital and labour transfers. Where capital transfers are concerned, the events of 1954 to 1967 indicate that the sector did not perform poorly in this regard. During this period, about ₦144m or 42% of the marketing boards' accumulated surpluses was disbursed as capital grant to state/regional governments. In addition, ₦24m or 7% of the funds was allocated to the regional governments as loans. This perhaps reflects how well or otherwise the accumulated "profit" was used. Needless to say, with the discovery of oil the sector lost its capital transfer potentials. This shift in capital transfer base is associated with the era of "money is not our problem but how to spend it" (Gowon, 1970). On the issue of the release of labour to other sectors, while the sector performed its role as an employer of the growing labour force in the economy, it could be said that the massive exodus of labour from the

agricultural sector subsequent to the oil boom of the 70s has made available a pool of unemployment beyond what the industrial sector could absorb. Worse still, the migrants from the agricultural sector hardly possess the requisite skills required in the industrial sector. To sum up, the high unemployment situation is no better even with the existence of the agricultural sector.

Fourthly, agriculture contributes to the balance of payments by increasing the country's export earnings and by expanding the production of agricultural import substitutes. This is called the foreign exchange contribution of the sector.

The Nigerian agricultural sector was the sole earner of the country's foreign exchange before the advent of oil, when the mining sector contributed a very small proportion of foreign earnings. Table 3 shows the situation from 1955 to 1994 (see also Figure 1)

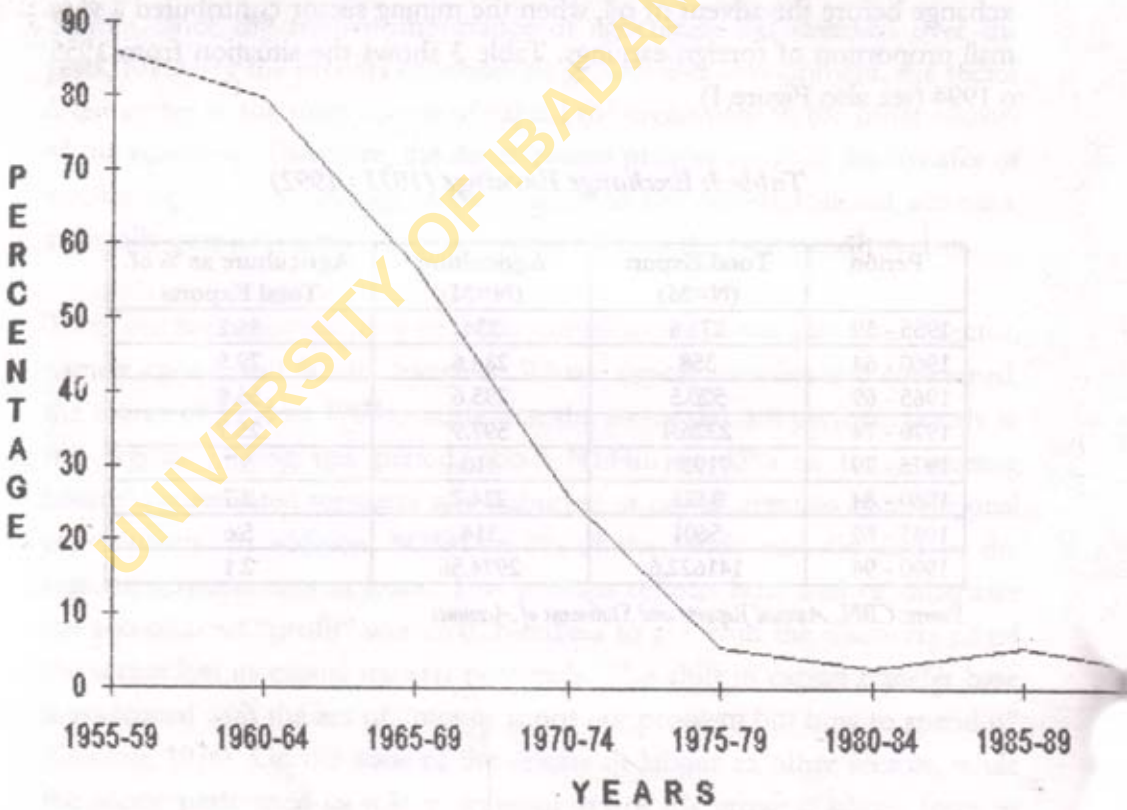
Table 3: Exchange Earnings (1955 - 1992)

Period	Total Export (N=M)	Agriculture (N=M)	Agriculture as % of Total Exports
1955 - 59	271.8	234	86.1
1960 - 64	358	284.6	79.5
1965 - 69	520.5	295.6	56.8
1970 - 74	2326.4	597.9	25.7
1975 - 79	7193.1	410	5.7
1980 - 84	8323	224.7	2.7
1985 - 89	5601	314	5.6
1990 - 94	141622.6	2974.56	2.1

Source: CBN, Annual Reports and Statement of Accounts

Agricultural products accounted for a significant proportion of total foreign exchange earnings in the period between 1955 to 1959 to the tune of 86%. This proportion declined sharply to 26% between 1970 and 1974, and to an insignificant proportion of 3% in the first of half of the 80s when the oil sector completely displaced the sector on the foreign trade scene. It may be instructive to add that in terms of capital formation, most of the foreign exchange receipts from the agricultural sector were expanded on the non-agricultural sector. Perhaps this contributed to the drastic decline of the sector not only in terms of foreign earnings but also in respect of revenue mobilisation and capital formation.

CONTRIBUTION OF AGRICULTURAL SECTOR TO EXCHANGE EARNINGS (1955 - 1992)



At this point, the relevance of Hirschman's linkage hypotheses cannot be over-emphasised, except that the dominant sector in the case of Nigerian economy should be seen as the agricultural sector, as against the industrial which the hypothesis favours. Thus, if structural transformation is thought of at all, it should be in the agricultural sector. One of the areas where the transformation can be infused into the sector is that of the capital goods content of the present farming technology. The transformation should set in motion the transition from crude implements to relatively sophisticated implements. The entire sector should be given the appropriate initiation to adapt to this transformation. The belief is that such transformation will free the sector from its present myriad problems.

Previous Studies

Eatwell et al (1991) argue that (a) capitalistic production entails the application of unaided labour to natural resources, drawing from Bohm Bawerk's argument that capital is the set of intermediate goods (or 'maturing consumption goods') emerging in the transformation of labour services into final goods when indirect methods of production are employed. Bohm Bawerk himself argued that capitalisation relates to the basic principles of the higher productivity of indirect (i.e. capitalistic) methods of production. Capitalisation emphasises the functional relationship whereby capital is the mode of realisation of advanced production activity.

Citing the works of Jorgenson (1961), Dixit (1969), Zarembka (1970), Kelly et al (1972), and Niho (1974), Osayimwese (1983) argued that the neo-classical solution to the problem of low agricultural output per man consists of raising agricultural productivity through technical progress and capital accumulation in agriculture. He argued convincingly that while capital accumulation in industry is still regarded as the "engine of growth", capitalisation of agricultural production and hence expansion of agriculture is also considered as a pre-condition for industrial growth.

Nwosu (1989) seemed to see mechanisation as the spring-board towards capitalisation of agricultural production. According to him, mechanisation entails the replacement of human muscles with the use of tools, implements and machines for the ultimate purpose of raising agricultural productivity. Drawing on the work of Moses, Nwosu indicated that each farm worker in United States produced enough to support five or six persons by 1854. This increased to ten persons by 1920, eighteen person by 1955, thirty persons by 1963, and by 1974 well over fifty-five persons. This changing trend was influenced by improved mechanisation.

Binswanger (1986) presented five generalisations regarding agriculture capitalisation. One, that the rate and pattern of capitalisation are governed substantially by an economy's land and labour endowments, by the non-agricultural demand for labour and by the demand for agricultural products. Two, that capitalisation leads directly to increased yields only in exceptional circumstances, such as when high-yielding seeds, pesticides and fertilisers are used. Three, that capitalisation is most profitable and contributes most to growth where land is abundant, where labour is scarce relative to land, and where labour is moving rapidly off the land. Four, that capitalisation is the main facilitator of the trend toward bigger farms. Five, large farms adopt new forms of machinery considerably faster than small farms, since they could afford collateral securities for borrowing purposes.

The need for the agricultural sector to be transformed is captured by Aromaye (1994) in these words: "within groups of developing economies, it is generally those with developed agriculture that have succeeded. The record economic growth and development in Japan, India, South Korea, Indonesia, and Malaysia convincingly demonstrates that countries neglecting agriculture tend to grow much more slowly than those who pursue agricultural development seriously".

The Nigerian government has never been silent on the transformation of the agricultural sector. This is evident in the First National Development Plan of 1962-1968 one of the policy objectives of which was stated as being:

> The modernisation of agricultural methods through the adoption of improved techniques, intensified agricultural education and changes in land tenure[6].

Similar objectives is found in by all the other national development plans.

Agricultural Capitalisation in Nigeria: Processes, Problems And Prospects

That the Nigerian agricultural sector is characterised by low physical capital content is incontrovertible as demonstrated in a study conducted by Iniodu, as cited in Iniodu & Wepong (1990). In this study the value of machetes and hoes as percentages of total value of capital goods by farm size as at 1978 in Cross River State is shown as ranging from 68% for large, to 79% for medium and 85% for small.

Table 4:

Farm Size	Total Value Of Capital Goods (₦=)	Total Value Of Machetes & Hoes (₦=)	Value Of M & H % Of Total Cap. Goods
Small	12.36	10.48	85.0
Medium	17.38	13.74	79.0
Large	30.43	20.84	68.0

Source: Cited by Iniodu and Ukpong NES, 1990.

The economic crisis of the 80s might not have altered the above scenario substantially in the agricultural sector. A thorough scrutiny of events in the agricultural sector points to the fact that capitalisation of agricultural sector is considered as synonymous with agricultural mechanisation, whereby mechanisation on the other hand has been conceived to mean tractorisation.

[6] Federation of Nigeria 1962 Page 206. ***The 1st National Dev. Plan.***

While one may not pick hole in the capitalisation - mechanisation identity, the failure of the Tractor Hiring Scheme (THS) points to the poor conceptualisation of the entire scheme (Makanjuola 1984).

Observing the centuries of agricultural development projects, Balarabe (1982) identified some of the undoings of the ADPS as follows:

1. It has encouraged the massive application of chemical fertiliser by the farmers (as if this is all that modern farming methods mean). This is considered to be in the interest of the big foreign corporations who will derive huge interests from the sale of fertiliser. Massive application of fertiliser, one that is devoid of any systematic and/or scientific application in terms of varying degrees of soil qualities and kinds, leads to long-term damage to the soil and causes other serious ecological distortion which may render the whole area an acidic wasteland in the not-too-distant future.
2. The projects often serve a handful of large-scale farmers who are basically urban dwellers. They will derive benefits from the projects at the expense of the small peasant farmers in the villages.
3. The projects cover a limited number of crops, notably maize, cowpeas, and even sun-flower, all in the name of High Yielding Varieties (HYV) whose introduction fails to consider the know-how of the farmers.

The home-based programmes for agricultural transformation represent another dimension of the process of agricultural "capitalisation" in their own right. Operation Feed the Nation (OFN) and Green Revolution (GR) could better be imagined at policy level against what the implementation left for history. In the case of Green Revolution, external involvement was noticed. This includes the Rockefeller Foundation, the Ford Foundation, the World Bank, the United States Agency for Industrial Development, and the Development Advisory Service. Perhaps this could explain external linkages that were associated with the programme as typified by fertiliser importation and the opening of the agricultural sector to international capitalism. Till

today external presence in the Nigerian agriculture is very visible as can be seen from the present Nippon Foundation (JSF) and Global 2000 Carter Centre sponsored programme (Sasakawa Global 2000) on improved food supply and agricultural capitalisation in Africa. Moreover, one can argue that no genuinely articulated agricultural policy exists along the line of capitalisation that satisfies Ayoola's six considerations, namely ecological, socio-cultural, simplicity, labour-intensive, divisibility, and the risk factor. Essentially, these are pointers to why past attempts were unsuccessful. The relevant question now is that of the kind and level of capitalisation that can be considered appropriate for the Nigerian agricultural sector.

Bearing in mind the characteristics of the agricultural sector in terms of population, farming methodology and farm-holding practices, the kind of capitalisation that the Nigerian agricultural sector requires should be the one whose primary objective is NOT labour-saving, at least in the thickly populated areas of the south-east of the country. This will imply that the kind of capitalisation required here will be one that contains land-saving innovations. Thus investments in fertilisers and irrigation may be required to raise crop yield per hectare, and, thus improve the farmer's well-being. It is instructive here to submit that, the search for such land-saving technology should be domesticated as demonstrated, for example, by sourcing fertiliser locally.

For want of a relatively large supply of land in the northern part of the country, the capitalisation approach may lean towards labour-saving innovations for the medium and large-scale farmers. Their sizeable proportion in number may be used as the take-off point for full-fledged capitalised agricultural production.

The prospects of the suggested diversified approach to the capitalisation of the agricultural sector in Nigeria will however, require the following.

First, if the capitalisation of the agricultural sector in Nigeria is to become a reality, perhaps along the path suggested, there is an urgent need to institutionalise an indigenous agricultural engineering industry that will be charged with the responsibility for developing and fabricating light and portable agricultural machinery and implements, suitable for use on small scale farms. Iniodu and Ukpong (1990) in Abba et al 1986) re-visited the idea suggested by a group of Nigerian economists, that the government should set up a "National Machine Building Corporation", to be charged with the responsibility of manufacturing machinery and machine tools for all sectors of the economy, the agricultural sector included. If there is any way by which the country's machine tools industry at Oshogbo can register its impact on the agricultural sector, one feels that it is by seeing this challenge as its own, and living up to desired expectations.

Secondly, to put in place the land-saving capitalisation approach to the agricultural sector, the issue of fertiliser should be re-visited in all its ramifications. There is the feeling that fertiliser ought not to be on the country's import list. One litmus test that agriculturally-based institutes like International Institution of Tropical Agriculture, the International of Agricultural Research and Training, and the Institute for Agriculture Research among others must perhaps pass before the year 2000 is to come up with a Nigeria-made fertiliser, to put an end to the various vices surrounding fertiliser importation in the country. The expectation is that such locally produced fertiliser will have little or no discongruence with the soil texture of the country, and the inherent characteristics of the country in terms of differences in soil fertility would be taken into consideration. As against the practice to date, institutions like Agriculture Research and Management Training Institute should not hesitate to work out a systematic and/or scientific application of fertiliser approach for the peasant farmers. Pending the time that this dream of having a Nigerian-made fertiliser is realised, there is an urgent need to improve the distribution channels, perhaps by allowing private companies to undertake distribution under competitive conditions.

The time factor should not be played down; thus there is the need to ensure that fertiliser is within the reach of the farmers by the beginning of rains.

Third, the all-embracing capitalisation of agricultural sector will bring within its focus improved attention to the distribution of crop varieties. This involves the technology of planting seeds and seedlings including planting by hand or mechanical planters. One problem to confront if peasant farmers are to welcome the idea of improved crop varieties (i.e. the so-called High Yield Varieties (HYV). This problem can be solved in two ways. One is to go on the capitalisation path, which is associated with little risk as mentioned earlier. The other route is for the government to assume greater responsibility by mounting substantial efforts to reduce the magnitude of risk involved in the chosen capitalisation path.

Four, government's genuine support for agricultural capitalisation should be made clear from the point of view of capitalising government expenditure on agriculture. This implies making agricultural research an important component of government capital expenditure.

Again, government policy toward capitalisation should cover patent laws for enforcing innovator's rights and encouraging disclosure, testing of machinery, support of standardisation measures and dissemination of information and support of agricultural engineering education and some university-based research. These are clearly appropriate interventions.

Finally, if capitalisation of the agricultural sector is to be meaningful, there is the need to address issues revolving around land ownership and land fragmentation in Nigeria. In spite of the Land Use Decree which vests the ownership of all land in the governments, communal ownership of land still persists, particularly in the South. The full benefits of capitalised agricultural production may not be reaped if applied in the context of the present land fragmentation practice. Also, with the capitalisation of the agricultural sector,

it is expected that the observed gender bias against women in Nigerian agriculture, especially in the North, will be a thing of the past.

Conclusions and Policy Recommendation

This paper has shown the rationale for capitalising the agricultural sec[illegible] in Nigeria. The problems that may hinder capitalisation efforts have been highlighted and a detailed analysis of the prospects of capitalisation of agricultural sector has been made pointing out the unique role that the government must be ready to play, together with the possible do's and don'ts to ensure the sustainability of such a capitalised agricultural sector. A diversified capitalisation approach is favoured whereby capitalisation that would ensure that land-saving is chosen for thickly populated areas of the country, while the labour-saving type is preferred for the sparsely populated areas. On the whole, an intermediate capital goods that lies between hoes and cutlasses on one hand, and heavy machinery and implements on the other, is defined as the appropriate capitalisation level, as this is considered suitable for the mass of small-scale farmers in the country. Medium and large farmers may depend on heavy machinery and implements, if affordable.

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