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CHANGING RESOURCE SYSTEMS AND PROBLEMS OF DEVELOPMENT PLANNING IN NIGERIA

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The resource system of a developing nation following independence may be in a state of flux. It is necessary to understand the nature of the transitions for development planning to be successful. In this paper analyses of transformations through which the resource systems of Nigeria are passing are presented and the problems which constitute obstacles to further growth are discussed.

1. INTRODUCTION

Nigeria's economy is making a rapid though painful transition from the structure inherited from the colonial administration to a modern system based on the mobilization of the internal natural and human resources to promote the welfare of the people. This process can be seen in all of Nigeria's resource systems which are in a state of flux. However, in spite of three five-year national development plans and numerous *ad hoc* development projects or campaigns ("operations") since attaining political independence in 1960, Nigeria has achieved very little success by way of substantially modernizing the resource management systems and increasing productivity, or raising the standard of living of the people and removing regional inequalities in development. This, to a large extent, has been due to a failure to understand the nature of the transformations which the resource systems have been undergoing and their implications for development planning.

The changes taking place in the economy have generated a new awareness of the country's resource endowment and a heightened perception of their development potentials. But there has not been the same degree of awareness and understanding of those things required for the full realization of these potentials especially in the areas of data and information gathering for planning and the various management options required to promote efficient utilization of both land and human resources. The objective in this paper is to analyze in some detail the nature of the transformations through which Nigeria's resource systems are passing and the kind of needs or problems which they have generated which now constitute obstacles in the way of further growth and development. The paper examines the roles played by government policies and actions and by various bodies (national and international) and planning units in bringing about the present situation.

The emphasis throughout this discussion is on the rural economy with particular reference to agriculture and to a lesser extent, forestry and mining. The rural areas have become problematical for development having been relegated to the background in past economic development activities. But, it is increasingly dawning on government planners that the economic development of these rural areas is most crucial to the social, political and economic stability of the urban centers or of the great zones of population concentration. It is also crucial to the achievement of balanced regional development. Thus, in the Third National

Development Plan, 1975-80, it was stated that in order "to ensure that the objective of balanced regional development is achieved . . . policy will be directed toward ensuring that both the rural and urban areas are equipped for their proper role in the development of the national economy." (Nigeria, 1975 p. 291).

Furthermore, it is believed that proper resource management in the rural economy is crucial to vigorous and stable industrial development in Nigeria. According to Onyemelukwe (1980), a great deal of industrial stability depends on the stability of the agricultural sector. The promotion of agricultural production and the coordination of agricultural resource distribution, storage and use will continue to be very crucial in the industrial development effort of Nigeria in spite of the recent euphoria of an oil boom.

2. THE COLONIAL HERITAGE

In order to provide the right perspective for subsequent discussions it is, perhaps, necessary to describe briefly some of the salient features of the colonial economic system in Nigeria especially as they pertained to agriculture. The policies of the colonial administration with regard to the development of Nigeria's natural resources were dictated primarily by the needs and tastes of the home country (Britain). Development and management of resources were geared toward the export market for which Nigeria became no more than a supplier of raw materials.

In the field of agriculture, Nigeria concentrated on the promotion of the so-called agricultural export products such as cocoa, palm oil and kernel, rubber and groundnuts. This was done at the expense of food crop production which received very little government attention. Thus all of Nigeria's major export crop producing areas became and still are "food-deficit areas" (Udo, 1970).

In the field of forestry, the export market favored certain species of timber trees which were referred to as "merchantable species." The less favored trees were termed "secondary species." This categorization of the timber trees which gave the impression that some types were useful and the others were not, led to selective logging and the overexploitation of the so-called merchantable species. The less favored species received very little attention and many were destroyed in land clearance and preparation for tree and arable crop cultivation. It is ironical that

these same secondary species now sustain the internal timber trade and wood-based industries (Adeyoku, 1978).

Mining activities were concentrated on the production of those raw materials which were needed either for export (e.g. tin) or for the smooth-running of the colonial export-oriented economy (e.g. coal for the railways and thermal electricity plants).

2.1 Export Base Theory of Development

This colonial export based economic system was actively embraced and developed after Independence. In fact many believed like Agboola (1977) that the role of export development could be so basic to regional economic development that other sources of regional income could be considered of secondary importance. The example of the former Western Nigeria (now, Oyo, Ogun and Ondo States) the main cocoa producing area was often used to buttress this point. The export sector was seen as contributing to government revenue, acting as an attraction to business investment and influencing the volume of residential construction. This pattern of development agreed very well with the postulates of the export base theory of development by North (1955).

North postulated a five-stage export base model in which a brief period of subsistence economy is followed by one of rapid development of export commodities which thereby creates the basis for regional economic growth. With infrastructural development, inflow of capital and the growth of external economies taking place, the way is paved for further regional economic development marked by intensification of exports and the emergence of residentiary industries to serve local markets. The eventual setting up and expansion of randomly-located foot-loose industries could in time lead to industrial products entering export markets, thus leading to a diversification of the region's export base.

This type of development process could be likened to what Ruddle and Grandstaff (1978) have termed "transferential development." This is a kind of externally-induced economic development involving the transfer to the developing countries of technologies, economic policies and systems and development projects which have been tested and found successful in the developed countries. But, as Ruddle and Grandstaff rightly noted, transferential development was most often applied in urban settings where it principally benefitted elites. This point was very well

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illustrated by the role the marketing boards had played in Nigeria's economy.

Commodity Marketing Boards were organized in Nigeria during the Second World War primarily to ensure a regular supply of essential commodities to the European market whose traditional supply sources and marketing channels were disrupted by the war (Adalemo, 1978). The Boards were designed to keep the local farmers interested in cultivating special export crops. "The incentive provided was the ability of these monopoly marketing organizations to protect the producers of the special export crops against the fluctuations of the world market prices. This created an element of stability which ensured a source of income from which producers could meet commitments such as the payment of taxes and school fees as well as fund major undertakings such as house construction." (Adalemo, 1978, p. 370-371.)

Between 1947 and 1954, the Marketing Boards had acquired enormous reserves and by 1962 firms and organizations operating with funds from them had invested as much as ₦80 million. This was over ten per cent of all investment by all governments and public corporations in Nigeria from 1959 to 1962 (Helleiner, 1964a, 1964b). The best known of these boards was the Western Nigeria Marketing Board. This board was responsible for funding the Western Nigeria Development Corporation which acted as a general development agency. But, as Adeniyi (1978) pointed out, this Corporation invested a larger proportion of its funds in non-agricultural projects. By 1962, this Corporation had spent nearly ₦3.2 million for the shares of five non-agricultural companies. This was a good illustration of the way in which the Marketing Boards transferred money from rural areas to urban centers thereby accentuating disparities in development between urban and rural areas. The pattern of investment allocation to development projects in the post-independence period have reinforced the predominance of urban centers over the rural areas. Table I provides comparative data on investment allocations between rural and urban areas in selected sectors of the Nigerian economy in the Second National Development Plan, 1970-74.

3. CHANGES IN NIGERIA'S RESOURCE SYSTEMS

Whilst the validity of the export base theory in explaining the trends and pace of regional economic development was perhaps unquestionable

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TABLE I

**Urban/Rural Investment Allocations in Selected Sectors of the
Nigerian Economy, 1970-74 Development Plan (All Governments)**

Item	Total Planned Capital Investment (N million)	Urban-based Investment		Rural-based Investment	
		N million	%	N million	%
Industry	172.2	155.4	91.2	16.8	9.8
Electricity	90.6	80.6	89.0	10.0	11.0
Water & Sewage	103.4	84.4	71.6	19.0	18.4
Town & Country Planning	38.2	36.0	94.3	2.2	5.7
Education	277.8	196.8	70.9	81.0	29.1
Health	107.6	90.4	84.0	17.2	16.0
Social Welfare	24.0	22.0	91.7	2.0	8.3
Agriculture & others	746.2	615.4	82.5	130.8	17.5

Filani (1981)

Sources: Aluko, S. A. (1973): Industry in the rural setting (Ibadan: Proceedings of the 1972 Conference of the Nigerian Economic Society), p. 217; and Federal Republic of Nigeria: Second National Plan, pp. 137-178; 212-265.

at one period in Nigeria's economic history, its usefulness has been weakened in recent years by the changes which have taken place in the resource systems themselves. Unfortunately, the approach to the management of the new emerging systems has been largely the same as that developed under the export base economic system. Yet there are significant differences between the old and the new resource systems as shown in the following paragraphs.

3.1 Decline of the Agricultural Sector and Shifts in Crop Production

The euphoria of oil wealth which gripped the country after the civil war caused widespread loss of interest in agriculture. This greatly weakened the agricultural sector and its capacity for foreign exchange earning and for promoting local industrialization. As Table II indicates, there was a general decline in Nigeria's primary agricultural exports from about 1967. Although, in recent years, there has been an upward turn in the production of these crops, export crop production has lost much of its appeal to farmers. In fact only cocoa, rubber and palm kernel production appear to have been substantially revived; the production of ground-

nut, palm oil and other agricultural exports has dropped drastically. Furthermore, until the recent changes in the economy, the agricultural export sector was of little consequence as a source of input into the industrial process. The weak linkage between agriculture and industry was thought to have been one of the major factors that triggered off the migration of people from the rural areas to the urban centers.

Since about the period 1974-76 there has been a steady shift in agricultural production in Nigeria from the export crops to foodcrops and industrial crops to provide a stable food and industrial resource base for the country. This change was marked officially by the launching of such agricultural development campaigns as the National Accelerated Food Production Program (NAFPP) and the Operation Feed the Nation Campaign and by the establishment of eleven river basin development authorities throughout the country. The food shortages and the high food prices and food import bills which have become a feature of the Nigerian economy since the Civil war have largely been responsible for these new trends in agricultural production and promotion in the country.

The major food crops now receiving much attention include yam, cassava, potatoes, rice, maize, guinea corn, millet, soya beans, wheat, cowpeas and vegetables. Cotton, tobacco, sugarcane and kenaf are the major industrial crops (cf. Agboola, 1979).

3.2 Differences Between the Old and New Agricultural Production Systems

One consequence of the concentration on the agricultural export sector was that, for a long time, Nigeria's resource management and improvement effort was limited to a fraction of the nation's resources and a small, though socially and economically dominant fraction of the millions of people who made use of the land (Areola, 1980). The export crop growers, for example, were never in the majority in any of the crop belts except perhaps in the groundnut growing areas. In the cocoa belt, for instance, although cocoa cultivation accounted for 30-50 per cent of the land under cultivation in many areas (Agboola, 1979) the proportion of the local farmers who were cocoa farmers was less than the proportion engaged in other agricultural production activities. However, thousands of migrant farmers were attracted to the cocoa belt.

Although mixed cropping was still practiced by the export crop

TABLE II

Nigeria's Primary Exports 1960-1976

Years	Cocoa ('000 tonnes)	Palm Kernels ('000 tonnes)	Palm oil ('000 tonnes)	Ground- nuts ('000 tonnes)	Ground- nut oil ('000 tonnes)	Ground- nut cake ('000 tonnes)
1960	156	425	186	338	48	554
1961	187	418	168	502	46	76
1962	198	373	120	539	64	89
1963	178	404	128	624	70	86
1964	200	400	136	553	81	141
1965	259	423	152	520	92	115
1966	193	400	145	582	106	135
1967	248	165	16	549	72	133
1968	209	162	3	648	111	174
1969	174	197	8	535	101	171
1970	196	185	8	292	90	163
1971	272	242	20	136	43	100
1972	228	212	2	106	40	99
1973	211	137	n	199	111	135
1974	180	186	n	30	24	31
1975	192	171	31	—	n	7
1976	228	272	3	2	—	29

Onyemelukwe, 1980.

n = less than 500 tonnes

Source: Schatzl (1973), Federal Office of Statistics: Annual Abstract of Statistics, Economic Indicators, Review of External Trade.

growers, the export crop farms were the closest approximations to monocultures that one could find in the rural landscape. The importance of all these facts was that it was relatively easy for governments through their agents, the agricultural officers, to reach the export crop growers and intervene effectively, if they wished, to promote productivity. The export crop growers were a fairly distinct group to whom innovations could be diffused relatively easily. Being largely monocultures, the export crops were amenable to "universal solutions" or package deals which have characterized resource development planning in most developing countries. The problems of agricultural productivity are reduced to a few simple propositions and the search is often for universal solutions that can be applied across the board by all and sundry. In the case of export crops, this was made possible partly by the fact that each crop could be identified with specific sets of soil and ecological conditions. Thus, it was relatively easy to introduce the use of chemical fertilizers in the

Timber logs, sawn (⁰⁰⁰ m ³)	Cotton (⁰⁰⁰ tonnes)	Rubber (⁰⁰⁰ tonnes)	Tin ore (⁰⁰⁰ tonnes)	Tin mental (⁰⁰⁰ tonnes)	Crude oil (10 ⁶ tonnes)
688	27	58	11	—	0.8
638	47	56	11	—	2.3
525	24	61	n	8	3.4
633	41	64	n	10	3.8
682	26	73	n	11	5.9
529	41	69	n	11	13.2
501	15	71	n	12	19.2
304	34	49	n	11	15.0
296	14	53	n	11	7.0
313	14	57	n	10	27.0
213	28	59	n	11	51.7
204	22	51	n	8	71.7
211	1	41	n	7	85.9
370	8	49	n	5	94.3
305	—	61	n	6	96.4
107	—	61	n	5	81.7
28	—	44	n	3	95.9

groundnut belt, and the planting of early maturing, high yielding varieties and the use of fumigants and fungicides in the cocoa belt.

The export crops are quite ideal for export in certain respects. They can easily be graded for quality control; they store relatively well and they can withstand long distance transportation without much risk of damage. Since the crops are produced primarily for export, the marketing board system also works quite well. The conveyance of the crops from the farms to the seaports follows well-defined channels. The marketing system is separate and distinct from the traditional market system (Adalemo, 1978).

Now, the present crop production systems differ in several ways from the export-oriented production systems. The shift to food and industrial crops could be likened to Ruddle and Grandstaff's notion of "transformational development." This is because it has involved working with existing or traditional resource systems which are already adapted eco-

logically and culturally to the different parts of Nigeria where they are being operated. However, the linkage of these systems has not been so much with international systems as suggested by Ruddle and Grandstaff as with the national urban-centered modern commercial/industrial economic system. The purported benefits of this type of transformational development have not yet materialized in any significant sense, perhaps, because the approach of transferential development is still being applied. This, in itself signifies a failure on the part of planners in Nigeria to grasp the implications of the new resource systems.

The new resource systems have greatly widened the range of agricultural products to contend with. This has some definite advantages in that food and industrial crop cultivation occupy more land and are more evenly spread throughout the country. They also engage several times more farmers or rural inhabitants than the cultivation of the agricultural export crops. If properly managed the new resource systems should foster more even development between the urban and rural areas and between one part of the country and another.

But this vastly increased scope of the resource systems—in terms of the range of crops and the population of farmers to plan for—has strained the management abilities of government planners. Unlike the relatively simple monocultures of the past, these food and industrial crops are grown under a wide variety of cropping systems. Variations in cropping patterns and farming practices are not confined to differences in broad ecological zones alone, but also occur within the same ecological environments (Agboola, 1979, p. 51).

Therefore, these new resource systems have not been so amenable to universal solutions or package deals as was the case with the agricultural exports. Yet, this is exactly what the agricultural development experts and planners are trying to do. This is very glaring in respect of the campaign to get farmers to apply chemical fertilizers to their crops. The most commonly advertised types are the NPK formula, urea and ammonium sulphate. These are recommended to farmers everywhere in spite of the fact that soil and environmental conditions vary widely. The recommendations are often given in respect of individual crops, say, maize, cassava, guinea corn or rice (see IART, Ibadan, 1978, 1980). These recommendations may be suitable for the few large-scale commercial farmers who practice monocultures and crop rotation but not so for the vast majority of local farmers who still practice mixed cropping.

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It is not surprising then that the adoption of this innovation has not been as rapid as was expected. Furthermore, the way the use of chemical fertilizers was introduced in many parts of the country has created the impression in the minds of many farmers that fertilizers are only ideal for certain cash or exotic types or varieties of crops and not for the local varieties. For instance, in many areas the use of fertilizers was first introduced in connection with such cash or industrial crops as cotton, tobacco, and soya beans and with the introduction of new varieties of maize, rice, cassava, wheat, etc. Another important feature of the food-crops is the strong cultural attachment of the local people to them, unlike some of the agricultural export crops such as cocoa and rubber. Thus, the people have been more wary and cautious about accepting innovations, such as new seed varieties, chemical fertilizers, and pesticides, that in their perception, might alter the taste or, even, the color of their food. This type of conservatism was never experienced in dealing with the export crop producers as the widespread use of fumigants and fungicides showed.

The relative insensitivity of the new agricultural systems to universal solutions or package deals can be judged from the relatively weak impact of some recent agricultural development campaigns referred to earlier. These were the Operation Feed the Nation Campaign and the National Accelerated Food Production Program both of which were initiated by the military administration. The present civilian administration also has embarked on another campaign termed "Green Revolution." Thus far, these campaigns appear to have succeeded more in giving rise to a group of 'elite' farmers than in markedly influencing the local traditional farmers and their farm management practices.

In the past, agricultural extension workers were trained primarily to cater to the needs of the agricultural export producers. The gross inadequacy of the number of trained extension workers became very glaring when the country was reorganized into nineteen states from the former four regional government structure. Many states are very short of trained agricultural extension workers. The situation has been made worse by the recent shifts in production to food and industrial crops. Now, extension workers in the various states have to serve vastly increased numbers of farmers. The result is that many farmers, especially in the more remote areas, cannot obtain the services of extension workers. Lack of proper guidance has led to improper application of some newly introduced agricultural inputs, such as, chemical fertilizers, pesti-

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cides and herbicides. Crop failures or low yields resulting from improper application of these inputs have only served to strengthen the local farmers' negative attitude to these innovations.

Distribution or marketing of the foodcrops is a major problem regarded by many as the root cause of recent food shortages and high food prices in the urban centers. As Adalemo (1978) noted, one main characteristic of the internal trade system in Nigeria is that it involves a large number of transactions and participants. "Each level of the marketing system brings an additional number of agents with the result that the marketing channel becomes quite long and since each participant hopes to make 'a cut' in the market the cost of marketing becomes high overall even though each participant barely covers her operating costs on the average" (p. 373).

Government planners' response to this problem has been to introduce into the internal foodcrop production economy, the commodity marketing board system characteristic of the export based agricultural economy. Commodity marketing boards were established at the national level for the country's major grain and root crops. The boards are charged with more or less the same responsibilities as the export crop marketing boards, including the collection and distribution of the foodcrops and the fixing of producer prices.

Perhaps, predictably, the new commodity marketing boards established for the internal trade system have not been as effective as was expected. The marketing board system was developed as a means of channelling export products to overseas countries; it had never been tested as a means of managing the internal distributive trade. In particular, the new commodity marketing boards have not been able to enforce the type of pricing system operated for the export products which gave producers lower prices than they would have obtained by themselves in the open market (see Table III). One physical evidence of the ineffectiveness of the new commodity boards is the number of empty grain storage depots found in widely scattered locations in the country. These storage depots were constructed under the National Accelerated Food Production Programme as collecting and storage depots for grain crops produced by local farmers. Most farmers are discouraged from taking their products to the depots because of the usually lower-than-market value prices they are offered.

Also, the new commodity marketing boards have had very little success in influencing the prices of foodstuffs in the markets. This is largely

TABLE III

Percentages of Actual World Market Prices Received by
Nigerian Farmers for Major Agricultural Export Products,
1948-57

Year	Cocoa	Palm oil	Palm Kernel	Groundnut
1948	32.3	—	—	—
1949	98.4	55.8	100	39.6
1950	50.0	59.7	38.2	32.3
1951	46.9	59.1	40.0	22.3
1952	68.5	72.6	65.5	45.7
Mean 1948-52	49.2	61.8	60.9	35.1
1953	70.8	93.5	53.1	43.3
1954	43.3	71.4	64.1	45.5
1955	67.5	52.4	59.6	50.0
1956	96.2	46.2	58.4	46.1
1957	72.1	46.7	60.7	54.0
Mean 1953-57	70.0	62.0	59.2	47.8

Filani (1981)

Source: Olatunbosun, D. & Olayide, S. O. (1974): Effects of the Marketing Board on output and income of primary producers. In Onitiri, H. M. A. & Olatunbosun, D. (eds.): *The Marketing Board System* (Ibadan: Nigerian Institute for Social and Economic Research).

because the internal trade system is firmly embedded in the fabrics of the society; it developed as a complementary arm of the traditional systems of production. The new commodity marketing boards will find it difficult to operate outside the traditional marketing systems as the export product marketing boards did. Only an integrated system in which both the traditional and commodity marketing board systems are merged can work, taking into account some of the peculiar problems associated with foodcrop distribution. Foodstuffs are more difficult to store and protect against pests than the agricultural exports. The multiplicity of small-scale producers makes the collection of these products at the local level much more difficult than it is the case with cocoa or any other agricultural export product. The distribution channels of various commodities also vary considerably as many studies have shown (Anthonio, 1967, 1968; Onakomaiya, 1970; Adalemo, 1972). The

smooth running of these various channels is hampered by inefficient and ineffective farm or feeder roads; inadequate transport services and market facilities and the lack of up-to-date market information.

3.3 Changes in Some Other Aspects of the Rural Economy

Apart from agriculture, two other aspects of the rural economy deserve brief mention. These are forestry and small-scale mining or quarrying.

The boom in the construction industry which began immediately after the end of the Civil war in 1970 greatly increased internal demands for wood. This increase in demand for wood led to the proliferation of sawmills not only in the forest region but also in the Derived Savanna and Guinea Savanna zones (Areola, 1981). In 1970 there were only 133 officially registered sawmills in the country (Enabor, 1973). By 1975 the number had increased to 348 (Hunhtanen, 1975) and by 1978 to 580 (Adeyoju, 1978).

This phenomenal increase in the number of sawmills (the 1978 figure represented an increase of over 400 per cent over the 1970 figure) gives some indication of the pressure to which the country's forest estate was subjected. At first, the sawmills showed preference for the 'merchantable species.' But as these became increasingly scarce to obtain there was a steady shift to the so-called 'secondary species.' Indeed, by 1978 secondary species provided the bulk of the raw materials of most sawmills.

Although the shift to secondary species has reduced the level of selective logging, it has greatly increased the rate of felling of trees especially in the secondary forests which had been denuded of their merchantable species in the past. With the increased scale of lumbering activity in the country, it has not been easy for government officials to monitor and control the operations of the comparatively larger numbers of wood cutters. For, apart from sawmillers, there are several sawyers, individual land owners and 'middlemen' who are engaged in logging throughout the country. Although a government licence is required before a timber tree can be felled, this requirement has done very little to regulate the felling of the trees. In fact, this law has turned out to be more of a way of collecting revenue for the local governments than of controlling the exploitation of the forests.

In spite of the increased rate of logging in the forests, there is very little concerted effort to introduce and enforce forest regeneration

measures. This is where the legacy of forest reservation left by the colonial administration has been most positively advantageous. Although the really undisturbed, high forest reserves cover only 10 per cent of the land area of Nigeria, they are now the major sources of high quality timber in the country. Furthermore, the forest reserves throughout the country have provided the only avenues for practicing modern forest management and conservation in large commercial tree plantations. By 1976 there were over 115,000 hectares of tree plantations in the southern states of Nigeria alone. Some of these plantations are of indigenous timber species such as *Khaya ivorensis* and *Nauclea didderichii*, but the majority are planted with exotic species notably *Tectona grandis* and *Gmelina arborea*.

In the northern parts of the country tree plantations were established and tree planting programs were embarked upon in some towns and localities not only to provide firewood and polewood and to protect the land against erosion but also to ameliorate local climatic conditions. Unfortunately, unfavorable soil and climatic conditions have placed severe limitations on the establishment of tree plantations in many parts (Iyamabo & Ojo, 1971).

In spite of all these developments, very little success has been achieved in arousing the interest of the local people in tree planting either for commercial purposes or for soil and land conservation. This is so even among people living in areas seriously affected by soil erosion such as the Nsukka-Okigwe cuesta landscape. In fact the attitude of the people to forests is very negative. To many, forests represent 'vacant' lands which sooner or later would be given over to some other uses such as farming, housing or industrial establishment. These other land uses are seen by many as better measures or evidence of modernization or development than forestry. Furthermore there is very little interest in tree planting because it does not bring quick returns on investment.

Large scale mining was introduced in the country by the British. This followed the opening of coal mines in Enugu area and tin mines on the Jos Plateau. With the discovery of crude oil in the Niger Delta, many oil wells have been sunk at several locations. However, all things considered, large-scale mining has remained localized in a few widely scattered pockets in the country. But with the boom experienced in the construction industry in the last decade or so, small scale mining, otherwise referred to as quarrying, has assumed great importance. The quarrying of sand, clay, gravel, red earth, marble and rocks is widespread

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throughout the country. In most cases, quarrying requires very little capital and only the simplest forms of equipment. Thus, it has attracted large numbers of unskilled labor throughout the country. Quarrying is particularly important as a major occupation in the vicinity of the big cities such as Lagos, Ibadan, Port Harcourt (Faniran et al., 1976), which are the centers of concentration of migrants from the rural areas.

Traditionally and culturally many of these earth materials are regarded as 'dirt.' In fact in most areas the diggers do not pay for the materials themselves but only for the labor in digging and for transportation to the cities. However, in the last few years and before people really became conscious of it, quarrying of earth materials had become real business and a major component of land use in the rural areas especially near big cities. Unfortunately, not much attention has been paid by government officials or planners to the evaluation, exploitation and utilization of these earth materials. There are no laws regulating the activities of the quarry workers. Yet, together with road building, quarrying has been responsible for a great deal of vegetation clearance and land destruction in several parts of the country. Huge blocks of land or entire interfluvies, several hectares in areal extent, may be completely dug up. The digging is not restricted to land surfaces alone; river beds also are dug up for fine building sand. Thus, quarrying poses a problem not only to forestry and agriculture (Fagbami, 1977) but also to fishing (Faniran et al., 1976). This is just an example of the conflicts in rural land use which have attended recent changes in the resource systems in Nigeria.

4. DATA FOR PLANNING PURPOSES

A major shortcoming of most of the resource development efforts referred to in the foregoing discussions is the very little attention paid to environmental, and in particular, soil data and information. For example, the concern for the development of a wide variety of food and industrial crops has exposed a great weakness of agricultural development planning in Nigeria. This is the dearth of real technical data and scientific information on the soils in particular and environmental factors generally. With the special agricultural export crops, each of which was limited to fairly well-defined ecological zones, it could be said that planners had comparatively little to contend with by way of spatial

variations in soil and ecological conditions that affected the crops. But, now, the wide variety of crops that need to be planned for require that greater attention be paid to environmental details especially the variety of soil types in different parts of the country. This is also true of current efforts to develop tree plantations in the country and expand the forest estate.

Most surveys of the elements of the natural environment in Nigeria have been carried out only at the reconnaissance level concerned primarily with the simple, direct gathering of a limited number of factual data on each element. But, possibly no other element of Nigeria's natural resource base has received as much attention as the soils. Yet, taken together, our knowledge of the soils is still comparatively limited and most soil maps are of the small-scale (1:100,000) generalized type. The paucity of detailed information on soils is reflected in the very few number of maps of soils at the local level. Although detailed soil surveys have been carried out, these are restricted to small geographic areas widely scattered throughout the country. It has been very difficult to correlate these widely scattered studies and build up a dependable data and information system on the nation's soil resources.

Furthermore, much research and experimental work on soil management and fertilizer use has been done in research institutes. But, the results of most of these studies are seldom identifiable with specific soil and land characteristics (Moutapa, 1973). They suffer from an all-too-common tendency to generalize from small observations on some local soil types for all tropical soils and environments. It is not surprising then that the transfer of the results of agricultural research to farmers has been rather slow. Without adequate detailed soil maps and a workable system of soil classification and correlation, innovations cannot easily be transferred from one part of the country to another.

4.1 Role and Influence of International Agencies

Several international agencies have contributed to the national effort to survey and evaluate the natural resources and production systems. Such agencies have included the Food and Agricultural Organization of the United Nations Organization which has carried out several studies on Nigeria's agriculture. Some of these studies were of a general, countrywide nature (e.g. FAO, 1966a) while others were specific to particular areas (e.g. Northern Nigeria, FAO/ICA, 1969) or type of agricultural system (e.g.

irrigation, FAO, 1966b). The Land Resources Division of the Directorate of Overseas Survey in the Ministry of Overseas Development, Britain were responsible for several land resource evaluation studies in different parts of Nigeria based on the land system concept (High, 1972; Areola & Faniran, 1977).

These studies have all been quite useful often because they provided the first real data and systematic information on the environment and natural resources of the areas surveyed. Still many of the land resource evaluation studies were no more than advanced first stage, exploratory surveys aimed at identifying the resource development potentials of an area and the possible problems.

The efforts of these international agencies have not been adequately rewarded often because governments at various levels have failed to reciprocate with necessary follow-up activities to evaluate various agricultural development options and draw up plans for the integrated development of the areas concerned. Even where some use has been made of the findings of these surveys; the practice usually has been to pick on a few isolated projects. This piecemeal approach to the implementation of recommendations arising from the land evaluation studies has been responsible for the rather poor concrete evidence of the impact of the work of the international agencies.

However, ideas generated by international agencies have featured prominently in Nigeria's national development plans. They have influenced her economic development strategies. Indeed, some people feel that an over-adherence to some of the views of these international bodies has had some definite adverse effects on our economic development strategies. One example which has been referred to is the preference of our planners thus far for large-scale capital intensive agricultural development projects which are much beyond the resources and technological competence of the millions of Nigeria's peasant farmers. The huge foreign exchange earnings from the sale of crude oil also encouraged our planners in this line of approach to agricultural development planning.

According to Wallace (1979), the decision to embark on large-scale irrigation schemes in Nigeria, where informed opinion, based on past experiences, had been in favor of small-scale schemes, was due to the influence of the international agencies. As Wallace sees it, after Independence, Nigeria entered fully into the era of five-year development plans when development planning was very much influenced by the

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viewpoints of the FAO, the World Bank and the ILO. Government planners came to accept the theory, widely held in the 1950s and 1960s in the western world that, the problem with agriculture in Nigeria was low productivity caused primarily by the presence of an illiterate peasantry, using very poor technology and ignorant of modern farming systems.

Whilst these observations of the international agencies might have been largely true, government planners, perhaps, misapplied these views by adopting a posture of planning above the people. Thus, as Wallace rightly noted, the diagnosis of the problem by the planners dictated the types of solutions to be tried. "The belief in 'modernization' ideology often leads the planners to approach rural development via building large-scale, capital intensive modern schemes; 'the dominant trend in these strategies is an instrumental, technocratic one that concentrates on the application of technology packages to the peasantry, and the creation of large-scale projects by government agencies to achieve target increases in output'" (p. 5).

Wallace specifically examined the impact of the Kano River Project a large-scale irrigation scheme in Kano State. The decision to build a large-scale irrigation scheme had forced Nigeria to turn to expatriates for help at all levels for designing the scheme, for construction and for the running of the top levels of management and the training of the lower levels. This was extremely expensive and had important implications for the introduction of the scheme into the rural areas. "When looking at the particular details for the Kano River Project as outlined by the consultants, it will be seen that the key role in the scheme is allocated to the management; the farmer is just there to be persuaded or coerced into transforming his role in agriculture. The importance attached to the actual farmer is almost nil, and at no point is much attention paid to understanding him, his farming system, his needs, his knowledge" (p. 7).

Large-scale irrigation schemes (and, perhaps, all such-like capital intensive projects) have been criticized further on the grounds that they involve the expenditure of large chunks of development funds in the development of tiny fractions of land and of the farming population in each region. For instance, the Kano River Project, when it is finally completed, will cover some 40,470 ha. of land and directly affect 1-2% of the farmers.

Actually, in spite of the long period of experimentation with farm settlement schemes, plantations and the like, large-scale farming is not yet firmly established in Nigeria. By local definition any farm enterprise

TABLE IV

Nigeria: Number of Large-Scale Farms

Area (ha)	No. of Farmers	
	1974/75	1975/76
10 - 19	232	46
20 - 39	80	47
40 - 59	32	91
60 - 79	48	8
80 - 99	19	—
100 - 999	—	94
1000 and Over	—	25

Akinwumi (1980)

that is up to 10 hectares in size is regarded as a large farm. Table IV shows the results of the enumeration of large-scale farms in Nigeria in the 1974/75 growing seasons (Akinwumi, 1980). Many of the large farms reported in 1975/76 were still in the planning stage, so that in terms of farms really operating, there were very few larger than 50 hectares. Most of the large farms are owned and managed by government agencies (parastatals) such as food companies, plantation or corporation authorities. Privately-owned large-scale farms are still very few. Government-owned large-scale farms have rarely been profitable ventures because of their excessively large overhead costs and bureaucratic bottlenecks.

4.2 The Age of Consultants

In the last few years there has been an increasing awareness of the need for integrated development of the nation's natural resources and to avoid dissipation of effort and funds in numerous uncoordinated projects. There is also increasing realization of the need to bridge the gap between the rural and urban areas and to remove regional inequalities in development. One of the steps taken to achieve some of those objectives was the creation of river basin development authorities throughout the country. This issue is discussed further later in this paper. What is relevant to the discussion at this point is that the establishment of the river basin

development authorities ushered in the era of consultants in land resource and project evaluation.

Many of the river basin development authorities were, at the outset faced with the problem of inadequate data and information upon which to base plans for the development of their territories. Even in areas where some soil surveys or land evaluation studies had been carried out, the available data and information still had to be updated, synthesized and interpreted before they could meaningfully be used for planning purposes. Therefore, the river basin development authorities resorted to making use of consultancy groups to engage in so-called pre-feasibility and feasibility studies. Since 1976 there has been a proliferation of consultancy groups in the country including both foreign and indigenous firms. Many of these consultancy groups were hastily formed to be able to partake of the huge sums of money being allocated for feasibility studies. Indeed, many, at least initially, did not have expertise in the relevant fields of soil survey, land evaluation, agriculture and irrigation engineering.

While it could be said that these consultancy groups have helped in spreading land evaluation studies to many parts of the country, some of them very remote areas; their overall contribution to systematic and scientific knowledge of the land and its resources may not be all that great. This is because these consultancy survey projects are still largely *ad hoc* and uncoordinated in nature. There are as many approaches being adopted in these studies as there are consultancy groups. The quality of the data collected and the method of presentation vary widely from one survey report to another. Thus, the results of these studies are difficult to correlate for interpolation or extrapolation purposes. The planning value of the data and results of many of these studies may not extend beyond the immediate projects for which the studies were commissioned in the first place.

Thus, in spite of the huge sums of money that have been spent on these survey and evaluation exercises, the country still lacks an adequate data base for meaningful and purposeful government intervention in land use at the local level which is what is called for by the new resource systems.

5. THE SEARCH FOR APPROPRIATE PLANNING UNITS

The creation of river basin development authorities was only the latest stage in Nigeria's search for appropriate development planning units. This

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search for appropriate planning units appears to be in tune with the transformations going on in its resource systems and in the economy in general. The major weaknesses in Nigeria's development planning effort have been ascribed to the fact that planning had always been done 'from above.' In essence, the country had adopted the "center-down" approach to development planning. Filani (1981) has summarized the characteristics of this approach as:

- a) excessive centralization of the planning machinery in government ministries, providing little or no scope for popular participation;
- b) concentration of development efforts on some selected sectors of the economy without any appropriate linkage among the sectors and with the rest of the economy; and
- c) concentration of socio-economic activities in the main urban centers hoping that this would generate the 'trickle down' effects that might improve conditions for the virtually neglected rural majority (p. 301).

The cry now is for a new orientation in Nigeria's planning strategy such that emphasis would shift to 'planning from below.' As Filani sees it "Planning from below would concentrate on the society itself and on . . . transforming, the basic structural elements which have hitherto impaired the capability of Nigerians to respond effectively to new economic and cultural changes" (p. 301). An important element of this new approach is the attention given to the spatial aspects of investments aimed at ensuring integrated development of both rural and urban areas and removing regional inequalities in development. It is this concern for the spatial aspects of investments that in the last decade or so has brought into the forefront the issue of finding the most appropriate planning units for the country.

5.1 Creation of States

As Mabogunje (1978) noted, the political arrangements within Nigeria in the colonial and early independence period did not provide a basis for dealing with the glaring regional disparities in development. In each of the four administrative regions existing before the civil war, the pattern of development was such that the level of infrastructural investment

was concentrated in the areas occupied by the dominant ethnic group to the detriment of the minority areas. The reorganization of Nigeria into nineteen states by 1976 was in realization of the fact that true political unity could only be achieved when most of its constituent ethnic groups genuinely participated in the country's administration and benefitted from investments in development projects. Thus, "the creation of states has become a critical element in the surge towards a new and higher level of spatial integration" (p. 3).

The creation of smaller administrative units is seen as a means of creating more centers of decision-making and of execution of development projects, thus facilitating the spread of development to more parts of the country. Even so, there are still glaring evidences and very loud complaints from people in peripheral areas of uneven distribution of amenities in each of the states. A disproportionate share of government investment still goes to the state capital and a few large urban centers in each state. This is particularly so in the case of location of industries; water and electricity supplies; housing, road development and provision of health facilities.

5.2 Local Government System

The comprehensive reform of the local government system in 1978 which led to the creation of 320 Local Government Areas throughout the country, was in order to increase the influence and direct participation of the local people in the decision-making process. As Filani (1981) argues, effective planning can be most successful at this local government level where information on societal needs and local resources is more reliable than at higher levels of government. The local government area can be conceived as the basic planning unit where the common people can be effectively mobilized for the transformation of the rural economy.

Unfortunately, the development of the new local government areas as real planning units has been hampered by many factors. Although the local governments were created by the federal government, they are under the financial and administrative control of the state governments through their respective ministries of local government. The state governments have not given much statutory powers to the local governments such that these local authorities can take major initiatives in resource development. The role of the local governments has been largely a supervisory one, being primarily concerned with looking after village and

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other minor community projects such as the construction of markets, culverts, minor roads and town halls. They also look after the local schools and health centers.

Many local governments often have cash flow problem when the state government fails to release or makes arbitrary cuts in the budgetary allocations to them. The state governments have strenuously resisted federal government attempts to deal with and finance the activities of the local governments directly. The local governments are also deprived of high quality management staff; usually junior and lower middle level civil servants are posted to the local government offices from the state ministries. The staff are not adequately equipped even to collate existing data on both the human and natural resources, let alone take radical decisions about the developmental challenges in the local area. Most local government councillors and officials have been reduced to the status of 'lobbyists' to cajole, coax or coerce the state government through the relevant ministries to site development projects in their area.

Unfortunately, in making their demands for investments in their areas, the local government leaders are more interested in town-based rather than rural-based development schemes. In fact, the rural inhabitants in general tend to underrate the development potentials of their own local resources. Being dissatisfied with the drudgery of rural life, most of them aspire to enjoy the same types of modern amenities and economic life characteristic of the big urban centers (Faniran & Areola, 1976). Yet, ideally, the focus of attention of the local government should be the local area, its resources and its small-scale primary producers—the farmer, the sawyer, the fisherman, the sand digger, etc.

5.3 River Basin Development Authorities

While the federal, state and local governments were still trying hard to establish a good working relationship, another form of planning unit was introduced by the military. In 1976, eleven river basin development authorities were established throughout the country. River basins are natural, geographic units with well-defined natural boundaries. But the ones defined for Nigeria look more like political units designed, perhaps, to solve some political problems. The river basin development units each cut across several drainage systems and quite a few extend over two states at least. The river basin development authorities are conceived as

suprastate development agencies which, by operating outside the state and local government systems can ensure the full and integrated development of their respective areas.

However, in practice, the river basin development authorities have concentrated on sectoral development (e.g. of water resources; irrigation farming) rather than on comprehensive regional development programs which may mean overriding existing administrative units. There have been conflicts between some state governments and river basin development authorities who, the states felt had tried to assert their influence and to initiate projects without consultation and which projects are not in tune with the state governments' programs. Although it is stated that the river basin development authorities would work in close consultation and collaboration with the state governments, the decree setting up the authorities is very silent on the mechanics of this relationship. In particular, there is no specific mention of possible cooperation between the state ministries of agriculture and the river basin development authorities. Thus, in most cases, these two bodies see each other as rivals and they may have conflicting views about the appropriate development project to establish in an area.

There may be duplication of effort, too. For example, the Benue River Basin Development Authority had planned to build small-scale irrigation schemes in parts of Ondo and Bendel States. But, these two states have programs to set up "optimum communities" which, also, involve building small irrigation schemes for groups of villages. Both the ministries of agriculture of the two states and the river basin development authority had designs on the same rivers but none was aware of what the other was doing (Adegeye, 1981). This is a typical example of the lack of coordination of effort characteristic of development planning in Nigeria.

Yet, it can hardly be said that there are too many planning units, given the size of the country, its diversity of ethnic groups and the wide spatial variations in ecological conditions. What is lacking is a well-thought out *modus operandi* which defines the functions of each unit and the forms of relationships between them. Political rivalries between federal and state governments have tended to hamper development planning in Nigeria and underlie the current poor relationship between some river basin development authorities and some state governments. Some state governments now see the river basin development authorities as tools of the Federal Government which could be used to initiate pro-

grams designed to curry favor from the local people for the political party in power at the federal level to the detriment of the parties that control the state governments.

As indicated above, the creation of the river basin development authorities was partly a political move. The river basin development authorities cover the whole area of Nigeria and are shared more or less evenly between north and south. Most of the so-called basins cut across several drainage systems and are clearly unwieldy to manage. In order to convince state and local governments of their lack of bias for any particular areas, the river basin development authorities have had to embark on several prefeasibility and feasibility studies all at the same time. These studies consume a great deal of money.

There is a feeling among some agricultural experts that it was unnecessary to have created as many as eleven river basin development authorities or even to have attempted to cover the whole country (Adegeye, 1981). The approach which had been adopted in the past should have been continued. In the past only river basins which had special problems or which were located in environments with special problems were designated as special development areas e.g. the Chad Basin; the Sokoto-Rima Basin and the Niger Delta. Issues of integrated development in other parts of the country could be tackled effectively at the local government level given the necessary powers and resources.

6. CONCLUSIONS—SOME SUGGESTED SOLUTIONS

The foregoing discussions were aimed at showing that various resource processes in Nigeria's rural economy were undergoing transformations. The transformations have features which are similar to those described by Ruddle and Grandstaff as characterizing the process of transformational development. But, in Nigeria, these transformations were not consciously or purposefully embarked upon. Therefore, they remained for long unguided, uncontrolled and very little understood. Development planning in Nigeria has all too often been in the form of reactions to crisis situations or unexpected extreme socio-economic conditions. Hence the piecemeal fashion in which development projects have been established and the never-ending experimentations with different planning units and economic development strategies.

There has not been enough forward planning based on assumed

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societal goals or notions of the type of society that one should aim at developing in the country. These societal goals should provide an identifiable and fairly stable and durable framework within which development efforts in the country are pursued. Apart from having desired objectives or goals clearly expressed in concrete terms, forward planning also implies a thorough understanding of the major directions in which the development process has been leading and is likely to lead and of the major factors controlling this process either in a positive or in a negative sense. Only then can any government intervene meaningfully in the development process and lead it along desired or valued paths and temper some of its negative tendencies.

Planning can only be as dependable and rewarding as the quality of the data and information upon which it is based. The recent changes that have taken place in the resource systems promise to provide Nigeria with a strong, highly diversified resource base for rapid economic development. But, as indicated earlier in this paper, the new resource systems are more delicate to manage and control. The higher levels of efficiency required in the management of the resource systems call for greater devotion to data gathering on a systematic basis. This would involve a revitalization of the established survey units in the country which appeared to have been relegated to the background in the era of consultants. For example, many of the nineteen states are yet to set up soil survey units even though agriculture purports to be their major concern along with education and social welfare.

The new resource systems also require that greater attention be given to the small-scale producers at the local level. This is because as Mabogunje (1977) has, rightly, put it development is essentially a human issue concerned with mobilizing communities and the whole society to engage in the task of self-improvement with the resources available to it. A way of mobilizing the local people is really to bring the government nearer to them and to involve them in the decision and implementation stages of development planning. The new local government system promised to bring this about except that it has not been given a chance to work effectively.

Transformation of the rural economy must involve also a modification of the people's resource management systems. In particular there is an urgent need to effect major structural changes in rural land use if the necessary inputs for promoting modernization of the economy are going to be of any real effect. The rural economy must shed any remaining

vestiges of its traditional subsistence nature and move toward regional specialization in production activities. The multiple systems practiced in every locality throughout the country make introduction of innovations very tedious and any hopes of success rather tenuous. With the emergence of regional specialization in crop production, for instance, will come land consolidation and the system of crop rotation. Scattered land holdings result from subsistence farming.

It is only when these structural changes in rural land use have been effected that such package deals as are now being thrown around can really work. Thus far, governments have shied away from direct intervention in land use to effect consolidation of land holdings. The Land Use Decree, 1978 has achieved little in this regard as it merely defined ownership rights and made provisions that would facilitate acquisition of land for public projects. It is true, however, that land consolidation and cropping specialization can be achieved not only by direct measure, but also, through indirect land use control measures and through the farm input subsidy system. After careful study, government planners should decide which crops to promote in each region of the country. In each region farm input subsidies, credit facilities and similar incentives should be given only to those who would be willing to grow such crops and at a certain level of operation.

Existing resource development schemes are, perhaps too presumptuous, expecting too much from the local people. Fortunately, the planners appear to have learnt from past mistakes and are now putting emphasis on small-scale schemes requiring only middle level technology. Many of the river basin development authorities have awarded contracts for feasibility studies on small-scale irrigation schemes in many parts of Nigeria. It is also well accepted now that agricultural development schemes, such as the irrigation schemes, should not lead to the expropriation of the farmers' land. Very often in the past agricultural development schemes had turned farmers into tenants or hired laborers with no hold on any land at all in their own locality. The problem of farmers displaced by irrigation development schemes is a sore one in Nigeria at the moment. Agricultural development would be really meaningful and forward looking when the farmer is allowed a measure of autonomy and innovations are taken to him wherever his land is located.

Finally, as was indicated in the discussions on the different aspects of the rural economy, it appears that Nigeria's development planners have not been able to cope with the vastly increased magnitude of the

resource systems. The problem appears to be basically a management one. Some of the dimensions of this management problem have been discussed already. But there is one other dimension that one may refer to and this is the problem of enforcement of laws and regulations pertaining to resource production activities and conservation. The failure of the Land Use Decree to effect any concrete changes in the land tenure systems is just one example of this problem. The inability to introduce quality control in food items offered for sale in the markets is another. The non-effectiveness of many innovations can be attributed to the failure on the part of the people to follow stipulated guidelines.

This problem of enforcement of laws and regulations can be substantially solved only through proper education of the local people. The people need to be enlightened more on the desirability of land use planning, land use control and conservation. Very often the local people do not fully understand the need for and the motives behind the laws and regulations passed by government and government agencies. In fact they are apt to see them as impediments put in their way by the government.

REFERENCES

- Adalemo, I. A. (1972), *The Marketing of Major Cash Crops in the Kainji Lake Basin*. NISER Monograph Series, No. 1, Ibadan: Nigerian Institute for Social and Economic Research.
- Adalemo, I. A. (1978), Marketing Systems in Nigeria. In Oguntinyinbo, J. S., Areola, O. & Filani, M. O. (eds.): *A Geography of Nigerian Development* Ch. 23, pp. 368-380. Heinemann, Ibadan.
- Adegeye, A. J. (1981 in press), Establishing river basin development authorities as a strategy for Nigerian rural development. *Journal of Agricultural Administration*, U.K.
- Adeniyi, E. O. (1978), Regional planning. In Oguntinyinbo, J. S., Areola, O. & Filani, M. O. (eds.): *ibid* Ch. 25, pp. 401-410.
- Adeyoku, S. K. (1978), The conditions for new forest products industries in developing countries. *Paper Presented at the 3rd International Congress on Wood as a Resource in World Economics, Munich, 30-31 May 1978*.
- Agboola, S. A. (1977), Regional agricultural development policy and land use planning in southwestern Nigeria. In Mabogunje, A. L. & Faniran, A. (eds.): *Regional Planning and National Development in Tropical Africa*, Ch. 20, pp. 191-201. Ibadan University Press.
- Agboola, S. A. (1977), *An Agricultural Atlas of Nigeria*, Oxford University Press.
- Akinwumi, J. A. (1980), *The Chances of Success With Large-Scale Farms in Nigeria*, mimeo, Department of Agricultural Economics, University of Ibadan, Nigeria.
- Antonio, O. B. O. (1967), The supply and distribution of yams in Ibadan markets. *The Nigerian Journal of Economic and Social Studies*, Vol. 9, No. 1.

- Antonio, Q. B. O. (1968), Fish Marketing Survey in the Kainji Lake Basin: Yelwa Area Study, Ibadan: Nigerian Institute for Economic and Social Research.
- Areola, O. (1980), Perspectives on environmental management in Nigeria. *Paper Presented at the United Nations World Environment Day Seminar, Federal Department of Forestry, Ibadan, June 6, 1980.*
- Areola, O. (1981 in press), *Ecology of Natural Resources in Nigeria*, Heinemann, Ibadan.
- Areola, O. & Faniran, A. (1977), A framework for land resource evaluation. In Mabogunje, A. L. & Faniran, A. (eds.): *ibid* Ch. 25, pp. 233-245.
- Ball, J. B. & Daniyan, C. O. (1977), *Summary of Plantation Areas in the Southern States of Nigeria*. Federal Department of Forestry, Ibadan.
- Enabor, E. E. (1973), The prospects of forest industries development in Nigeria. *Nigerian Geographical Journal*, 16(1), pp. 51-65.
- Fagbami, A. A. (1977), *Soils and Agro-Environment of Ibadan Region*. Department of Agronomy, University of Ibadan, Ibadan.
- Faniran, A. & Areola, O. (1976), The concept of resources and resource utilization among local communities in Western State, Nigeria. *African Environment*, IDEP-UNEP-SIDA Environmental Studies and Regional Planning Bulletin Vol. II, No. 3 pp. 39-51.
- Faniran, A., Sada, P. & Areola, O. (1976), River sand mining, its organization and the building industry in the Lagos area. *Quarterly Journal of Administration, University of Ife, Nigeria*, Vol. X(4), pp. 423-435.
- Filani, M. O. (1981 in press), Nigeria: The need to modify center-down development planning. In Stohr, W. R. & Fraser Taylor, D. R. (eds.): *Development from Above or Below?* Ch. 11, pp. 283-304, John Wiley & Sons Ltd.
- FAO/ICA (1960), Report on the Agricultural Survey of Northern Region of Nigeria, Kaduna (mimeographed).
- FAO (1966a), *Agricultural Development in Nigeria, 1965-1980*. Rome.
- FAO (1966b), *Survey of the Water Resources of the Chad Basin for Development Purposes*. Rome.
- Helleiner, G. K. (1964a), The East Nigerian Development Corporation. *Nigerian Journal of Economic and Social Studies*, No. 6.
- Helleiner, G. K. (1964b), A wide ranging development institution: The Northern Nigerian Development Corporation, 1949-1962. *Nigerian Journal of Economic and Social Studies*, No. 6, pp. 239-255.
- High, C. (1972), Land evaluation studies with special reference to Nigeria. In Barbour, K. M. (ed.): *Planning for Nigeria*, Ch. 10, Ibadan.
- Institute of Agricultural Research and Training, University of Ife, Ibadan (1978), *Report of the 7th Annual Conference on Package of Recommendations for Production of Food Crops in Southwestern Nigeria*.
- (1980), Report of the 9th Annual Meeting on Package of Recommendations, *op. cit.*
- Iyamabo, D. E. & Ojo, G. O. A. (1971), Plantation establishment techniques in the savanna areas of Nigeria. *Nigerian Journal of Forestry*, 1(1), pp. 16-20.
- Mabogunje, A. L. (1977), *On Developing and Development*, Ibadan: University Lecture Series (Ibadan University Press).
- Mabogunje, A. L. (1978), Geographical perspectives on Nigerian development. In Oguntayo, J. S., Areola, O. & Filani, M. O. (eds.): *ibid* Ch. 1, pp. 1-13.
- Moutappa, F. (1973), Soil aspects in the practice of shifting cultivation in Africa and the need for a common approach to soil and land resource evaluation, pp. 31-35 in *Draft Report FAO/SIDA/ARC Regional Seminar on Shifting Cultivation and Soil Conservation in Africa*, Ibadan July 2-21, 1973.

- Nigeria (1975), *Third National Development Plan 1975-80* Vol. 1, Lagos.
- North, D. C. (1955), Location theory and regional economic growth. *Journal of Political Economy*, 63(3), pp. 243-258.
- Onakomaiya, S. O. (1970), The Spatial Structure of Internal Trade in Delicacy Food-stuffs in Nigeria. Unpublished Ph.D. Thesis, University of Wisconsin, Madison, Wisconsin.
- Onyemelukwe, J. O. C. (1980), Natural resource management for stable industrial development in Nigeria. *GEOFORUM* Vol. 11 pp. 419-427.
- Ruddle K. & Grandstaff, T. B. (1978), The international potential of traditional resource systems in marginal areas. *Technological Forecasting and Social Change*, 11, pp. 119-131.
- Udo, R. K. (1970), Food deficit areas of Nigeria. *Geographical Review* LXI(3), pp. 415-430.
- Wallace, Tina (1979), *Rural Development through Irrigation: Studies in a town on the Kano River Project*. Ahmadu Bello University, Zaria: Center for Social and Economic Research. Research Report No. 3.