



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

Q. B. O. ANTHONIO AND V. O. AKINYOSOYE

*The Changing Structure of Nigeria's Agriculture and Prospects for the River Basin Development Reorganisation Programme**

This paper is concerned with the changing structure of Nigeria's agriculture brought about by a reorganisation programme set in motion in the 1970s to improve the deplorable performance of all the participants in the agricultural sector of the nation's economy. This was particularly critical throughout the 1970s in the food subsector where there was a perceptible market disequilibrium which can aptly be described as a situation of permanent excess demand; a market condition in which there was a constant under-production of all major categories of food items in the country. The food crisis though noticeable before the Nigerian Civil War years (1967–70) as indicated by Anthonio in 1967¹ appeared to have worsened after the Civil War ended in 1970 (Akinyosoye 1984). And some of the unpleasant consequences of the food crisis included large importation of food, (₦1,020.7 million in 1978) soaring food prices which contributed to the high cost of living and stagflation with consequent falls in nutrient intake both in the rural and urban centres.

To solve this crisis, the Nigerian Government initiated the Green Revolution Programme (GRP) late in the 1970s (Idachaba 1980), and adopted the River Basin Development (RBD) approach to achieving its goals. A critical examination and evaluation of the prospects of the reorganisation programme introduced into rural farming communities through the numerous River Basin agricultural projects is the main focus of this paper and some suggestions are made on the future operational strategies needed to make the reorganisation programme contribute more effectively to increased agricultural production in general and food production in particular.

THE GREEN REVOLUTION PROGRAMME (GRP) AND
NIGERIA'S RIVER BASIN DEVELOPMENT AUTHORITIES

The GRP was initiated in 1979 as a comprehensive development programme designed to revolutionise not only agricultural production by boosting the production of Nigeria's food and export tree crops, but also

*Paper presented by F. J. Idachaba.

improve life generally in the rural areas of the country. The cardinal goals of the Federal Government of Nigeria in initiating the GRP was the attainment of self-sufficiency in food within the shortest possible time; production of enough livestock products for the domestic and export markets; and the revival of the declining trend in the production of traditional export crops, such as cocoa, oilseeds, rubber, cotton and coffee.

Several policy actions were contemplated and initiated² at achieving the goals of the GRP but the most significant, in terms of scope and financial commitment, was the programme that involved harnessing the waters of Nigeria's river basins for food production.

Historically, the river basin development concept had been accepted in Nigeria since 1962 when in the first post-independence National Development Plan (1962–8), a substantial amount of money was allocated to some irrigation projects in the Northern part of the country.³ At the planning stage of the second National Development Plan (1970–4), planners having grasped a better understanding of the concept of river basin development broadened the scope of the existing river basin schemes to include not only irrigation projects but fishing projects, hydro-electricity generating facilities, flood-control schemes and improved navigational facilities. And in 1976 with the recognition that a more comprehensive regional approach to integrated development within the framework of the existing 19 States was necessary for the economic wellbeing of the Federation, the then Federal Military Government resorted wholly to the river basins development concept and promulgated the River Basins Development Authorities Decree No. 25 of 15 June 1976⁴ which led to the establishment of 10 statutory bodies to manage Nigeria's River Basins. The eleventh body was added in 1979.

The 11 RBDs have increased to 18 since the beginning of the 'life' of the present Military administration⁵ with one RBDA in each state except for Lagos and Ogun States which jointly have one and are now called River Basins and Rural Development Authorities (RBRDAs).

The River Basins are charged with specific functions as stipulated in the decrees establishing them. This paper is however limited to those aspects of the River Basins' operations connected with structural changes introduced into the Nigerian farm industry.

The main activities planned for change in the farm industry include:

- (i) Building of large dams and provision of water from reservoirs and lakes for irrigation to farmers and farmers' recognised associations, thereby supplementing rain-fed agriculture with irrigation agriculture to minimise uncertainties in crop production and output supply;
- (ii) Selection of participating farmers and allocating farm lands in economic sizes (3–4 ha) to each of them, thus increasing the average size of farm holding;

- (iii) Undertaking mechanical clearing and cultivation of land as well as power-assisted harvesting operations thus changing from labour intensive agriculture to a relatively capital intensive agriculture;
- (iv) The timely provision of all forms of non-conventional inputs – fertilizers, pesticides, herbicides and fungicides and improved planting materials, thus changing the industry from a traditional one to a more modern one;
- (v) The provision of an institutional mechanism at each River Basin agricultural project site in form of a continuous physical presence of River Basin operatives including agriculturists, engineers and administrators to provide timely assistance to participating farmers, thus ensuring an improved performance.
- (vi) Equal access to farmland and other productive assets, farm inputs, credit and so on, thus improving the opportunities of those wanting to go into commercial agriculture.
- (vii) Encouragement of farmer co-operatives for joint produce harvesting and processing to ensure that more benefits accrue to rural farmers and to enhance their market power.
- (viii) Encouragement of farmers' representation in some decision-making bodies (e.g. choice of participating farmers) on project sites as a prelude to future active participation of all in the progress of each local community in which RBRDA projects are located, thus giving farmers some degree of 'political' power.

With the foregoing review of the structural changes introduced in the country's farm industry by the River Basins, one is tempted to believe that Nigeria as a whole stands to gain both in the short run and the long run from the huge financial investments on all the established RBRDA projects. From observations during a recent study however, (Akinyoso 1984), it is doubtful if the country can achieve much from the River Basins if the approach currently adopted is not drastically reviewed and modified. The reasons for associating the future prospects of the River Basins' attempts at changing the structure of the country's farm industry with some degree of uncertainty are now discussed:

Confused objective

The 1979 Act which established the RBDA's was explicit on the statutory functions of the River Basins but failed to assign to them the responsibility of being directly involved in food production. This apparent oversight was indeed deliberate in view of the then existing constitutional arrangement which limited the role of the Federal Government to agricultural research, co-ordination, and external relations, while the state governments had the residual powers including the responsibilities for food production. Some over-zealous River Basins, however, are presently actively involved in food crop and

poultry production. Confused objectives and bureaucratic decision-making contributed significantly to the failure of previous agricultural reorganisation schemes in Nigeria (Oluwansanmi 1966; Olatunbosun, 1971).

Input distribution

At present the River Basins supply all forms of non-conventional inputs to participating farmers; and these are supplied at subsidised prices. The input delivery role of the River Basins has parallels in some state and other federal agencies. The implication of this parallelism in roles is that without a well co-ordinated arrangement, such input delivery system may lead to input trafficking because of varying subsidy rates and inefficiency in input delivery and clearly duplicate efforts and waste resources in an area more effectively handled by the state extension services.

Inappropriate out-growers support

The River Basins are involved directly in almost all farm activities; from land preparation to post-maturity activities such as processing, storage and sales in varying degree. The support in the form of labour, machinery and chemicals is usually priced at rates far below costs to the Basin and well below market prices. From all indications the River Basins' involvements in farm activities seem excessive and may have some unpleasant consequences in the future. Some of these problems are as follows:

- (a) There is the danger that farmers may develop a *dependency syndrome* whereby they paradoxically come to regard such River Basin's involvement as a permanent feature of their activities and find it difficult to withdraw from the involvement at a later date;
- (b) This level of assistance is obviously a shield against real-life situations in the farm industry and may be protecting marginal and inefficient farmers;
- (c) Since the Basins cannot embrace all farmers, their level of activities is biased against non-participating farmers and will lead to greater income inequalities in rural areas; a basic negation of one of the cardinal principles of integrated rural development;
- (d) Any level of farmer involvement is expensive, wasteful and clearly not sustainable in the future, with expanding scope of the activities of the River Basins due to larger numbers of participating farmers;
- (e) Most of the participating farmers have no legal rights of ownership to the land they are farming. Consequently, the River Basin subsidies will be capitalised into quasi-rent for the next generation and inhibit future investment. The increase in land values will further inhibit farm investment and returns, degenerating into a misappropriation syndrome the Basins cannot afford;
- (f) Finally, the level of involvement, and the input price subsidy scheme attached will as a rule 'disturb' private sector participation; consequently, the usual attitude to work that goes with public

institutions will ruin a well conceived but badly managed programme.

'Economies of scale'

The planners of the River Basins irrigation schemes seem to have implicit faith in 'economies of scale', hence the size of all the irrigation schemes at present in full operation (Bakalori in Sokoto, Rima River Basin, Tiga in Hadeja, Jamaiare, and Cyan in Ogun-Oshun River Basin, to mention a few). Such large irrigation schemes require for their effectiveness an abundance of materials, spare parts, high level manpower, reliable communication systems, astute managerial competence and other institutional infrastructures. In addition, a positive gross profit can only be guaranteed for such huge investment provided the crop and livestock enterprises involved are high-priced. Given the level of investment being undertaken by the River Basins, it is extremely unlikely that such enterprises are conceivable in the immediate future.

When some countries (for example, India and Israel) adopted the River Basin Development concept as a means to agricultural development they started with large irrigation schemes but later realised that 'small is beautiful' and invested more in small schemes with better spatial distribution, more economic to run and less complex to manage.

Poor cost recovery

In the River Basin Development projects of other countries, cost recovery through sales of electricity, potable water and irrigation water is often built into the economic analysis that goes into the planning of such project. In Nigerian River Basins projects this cost recovery aspect is not given much attention. The implication is that when the source of *cheap funds* (through petroleum export) dries up, the establishment of new irrigation schemes as well as the maintenance and effective use of the existing ones will be difficult if not impossible to undertake.

Erratic fund allocation

Contrary to expectations, the method of allocating funds to the RBDAs in Nigeria is vague. This is evident in Table 1 where there is no apparent relationship between funds allocated to each RBDA and estimated land area of each Basin area or estimated population of people within the catchment area of each Basin. This contention is given some statistical weight through a simple correlation analysis in which the correlation coefficient (R) between resource allocation and estimated land area was found to be as low as 0.36 and the correlation coefficient between resource allocation and estimated population of each catchment area was as low as 0.31.

Poor intra-state involvement

Finally, these Federal Government projects, with their large investment in irrigation tend to eliminate any urge on the part of the state and local governments to be remotely interested in River Basin Development

Table 1: *Federal Government Allocations, Estimated Land Area and Estimated Population: River Basins Development Authorities, Nigeria.*

RBDA	Allocation 1981-1985 (₦ million)	Estimated Land Area (KM ²)	Estimated Population 1979 (millions)
Anambra – Imo	105.00	30,003	10,845
Benin – Owena	132.00	56,791	7,742
Upper Benue	118.00	84,042	3,887
Lower Benue	102.00	105,350	6,643
Chad Basin	170.00	136,361	4,472
Cross River	80.00	28,620	5,188
Hadejia – Jama'are	127.00	64,692	10,439
Niger-Delta	85.00	20,873	2,581
Niger River	146.00	158,540	7,426
Ogun-Oshun	145.00	66,264	12,862
Sokoto – Rima	597.00	166,134	9,829

Source: Akinyosoye (1984) table 10.

Projects. The implication of this is that the Federal Government may be embarking on a programme it cannot eventually handle alone if the other two tiers of government are not involved and assigned specific financial and management responsibilities.

On the strength of foregoing observations and comments there is an urgent need for a drastic reorganisation of the operations of the River Basins if the country hopes to gain from the structural changes they have introduced into the country's farm industry. More important, future projects/schemes have to be organised along the lines suggested later in order fully to tap the resources of Nigeria's river basins for the benefit of its teeming population.

PROPOSALS FOR THE FUTURE

The proposals discussed below, if implemented in a concerted manner, will contribute immensely to a more effective River Basin Development Programme and, also fulfil some of the aims of agricultural revolution in Nigeria.

First, for effectiveness, the RBDAs should enjoy more autonomy and therefore be relieved of the traditional bureaucratic control prevalent in government parastatals.

Second, indigenous financial institutions such as the Nigerian Industrial Development Bank (NIDB), the Agricultural and Cooperative Bank, merchant banks and private entrepreneurs should be involved in the design, funding and operations of projects connected with small, medium and large irrigation agriculture. A broad-based financial commitment will mean a lessening of government *absolute* financial control and thereafter keep political considerations to the minimum in

allocating human, material and financial resources needed for effective launching and management of the River Basin projects. In addition, the chief executive (General Manager) of each River Basin will become directly accountable for the success and failure of his projects.

Third, governments have to borrow ideas from the private sector if they want successfully to introduce structural changes in the farm industry through the River Basins farm projects. Using the conventional bureaucratic managerial approach to the management of the operations of the River Basins cannot be very effective. For example, a private company, the Nigerian Tobacco Company (NTC) has shown in the last 50 years that an effective agricultural system based on modern farm technology can evolve in this country with limited government intervention. Prior to 1933, various attempts by the Department of Agriculture in Nigeria to develop commercial tobacco production failed (Akiwowo and Basu 1968). In 1934 the British American Tobacco Company Limited (BAT), the parent company of NTC, on its own started a revolution of tobacco production in Nigeria. With world-wide knowledge about tobacco production, BAT introduced innovations into Nigeria's tobacco farm industry in a way similar to that which the River Basins are now attempting. The salient features of that approach are summarised thus:

- (a) a new farming system that guaranteed increased production and allows for a more intensive utilisation of land, labour and other farm resources was evolved.
- (b) the use of modern inputs, such as fertilizers, pest and plant disease control chemicals and mechanised farm equipments. As expected of private entrepreneurs, inputs were introduced *after very careful investigation and experimentation* to find the most appropriate ones for the agricultural environment of the tobacco-growing areas. Soil tests, for instance, helped in determining quantity and type of fertilizers and agro-chemicals needed. In addition, *economic prices* were charged for these inputs;
- (c) the introduction of a simple and easily acquired method of processing of tobacco leaves (flue-curing) which increased farmers' incomes substantially;
- (d) Finally and most important, the introduction of a farm organisation framework unique to tobacco farmers in Nigeria. The tobacco farmers were encouraged to form *organised groups*.

The aftermath of this business approach to farm organisation is that over the years productivity and income in tobacco leaf cultivation have been increasing. With this background, it is proposed that the Federal Ministry of Agriculture, Water Resources and Rural Development should set up a *task force* that will work out a new scheme for the operations of Nigeria's River Basins with a view to introducing business concepts into their management.

Fourth, the River Basins should as a rule limit themselves to the provision of physical and institutional infrastructures and build in a cost recovery mechanism into the financial management of the irrigation projects. The River Basins should not undertake direct food production.

Finally, irrigation schemes should not necessarily be 'large' but small-scale or medium size within the managerial competence of Nigerians.

CONCLUSION

The main theme of this paper has been to suggest new strategies for reorganising the River Basins in Nigeria in order to make them contribute effectively to the goal of restructuring its farm industry. The problem with Nigeria's River Basins does not seem to lie in the concept of River Basin Development *per se* but in the size of investment and the conventional bureaucratic managerial approach to River Basin Management; an approach that is completely devoid of any touch of business efficiency. After all, farming is a business and if the government gives the wrong impression that agricultural development involves the use of heavy machinery, the building of huge dams, and, inadvertently deliberate waste and a level of investment over and above what most investors consider reasonable, agricultural revolution in Nigeria may continue to be a dream. It is therefore suggested within the information available that the private sector should be involved with both the fundamental planning of the programme as well as the technical, economic and socio-political aspects of their (RBDA) activities. A business-like approach should be introduced towards the design, funding and operation of Nigeria's River Basins if the country hopes to benefit from their irrigation projects.

NOTES

¹See Anthonio (1967) for a detailed exposition on the state of agriculture in Nigeria in the pre-Civil War era.

²See Idachaba (1980) for the core of recent policy options for food production in Nigeria.

³For details of these early irrigation schemes, see *National Development Plan 1962-68*.

⁴See Federal Ministry of Information, River Basins Development Authorities Decree 25 of June 1976 and Decree 37 of August 1976, for the names of the RBDAs and their statutory functions.

⁵See Federal Ministry of Agriculture, (1984) Agric. News vol. 4 No. 10 July - August.

REFERENCES

- Akinyosoye, V. O., *River Basins Development Authorities and Nigerian Food Economy: An Assessment*, Preliminary Report, NISER, Ibadan., 1984.
- Akiwowo and Basu, *The Social Organisations of Tobacco Growers in Northern Oyo Division and Adoption of New Farming Ideas and Practices*. NISER, Ibadan, 1968.

- Anthonio, Q. B. O., 'Towards An Agrarian Reforms in Nigeria' *Proceedings of the Agricultural Society of Nigeria*. vol. 2, 1984.
- F.A.O. Production Yearbook (various issues)
- F.O.S. Digest of Statistics. (various issues)
- Idachaba, F. S. et al., *The Green Revolution: A Food Production Plan For Nigeria*. Vols. 1 and 2, Federal Ministry of Agriculture, Lagos, 1980.
- NISH (1983) Federal Office of Statistics, Lagos, Nigeria. Report No RCS/RASS/83/1.
- Ogenlaja, S. B. *Nigeria's Food Imports (1960-1980 and some Selected Socio-economic Factors*, Department of Agricultural Economics, University of Ibadan, Nigeria, 1984.
- Olatunbosun Dupe, 'Western Nigerian Farm Settlement: An Appraisal', *Journal of Developing Areas*, 1971.
- Oluwasanmi, H. A. 'The Israeli Moshav in Nigeria: An Estimate of Returns' *Journal of Farm Economics*, vol. 48, no. 2, 1966.