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POVERTY ALLEVIATION IN NIGERIA



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POVERTY ALLEVIATION THROUGH AGRICULTURAL PROJECTS: A Review of the Concept of the World Bank Assisted Agricultural Development Projects

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ABSTRACT

The Agricultural Development Project (ADP) concept has been used as the primary method to increase production and welfare in the smallholder agricultural sector in Nigeria. This was done through the provision of farm and crop development programmes and services, rural infrastructures, institution building, human resource development, and substantial technical assistance. Since 1974, The World Bank has given substantial support to this programme. The earliest ADPs were restricted in their coverage to specific areas within some states and were called enclave projects. The federal and state governments were impressed with the results of the enclave projects. This led to pressure to expand the enclave projects and to have ADPs in those states which had not yet benefited. State-wide ADP projects managed under the same semi-autonomous agency concept were developed, followed by the three multi-state ADPs (MSADP 1, 3, 3), and the present sector- and sub-sector approach with the ADPs as the main delivery agents. The ADP concept represents a clear shift from capital intensive investment projects for selected high-potential areas to a development of the country's small holder sector in the drive to enhance rural income and alleviate poverty.

1. Introduction

Fundamentally, poverty is a negative term denoting absence or lack of material wealth. Such absence however, is seldom absolute, and the term is usually employed to describe the much more frequent situation of insufficiency either in the possession of wealth or in the flow of income (Seligman and Johnson, 1933). Greenwald and Associates (1965), defined poverty as 'a condition in which income is insufficient to meet subsistence needs.' This implies that levels of living may be considerably lower than the minimum living standard. The per

establish or strengthen the state-owned input supply companies (FASCOMs) which would manage and service the FSCs. In some cases cooperatives were to be supported.

4. Appraisal of the ADP Strategy

In this section, an attempt will be made to appraise the ADPs based on the extent to which they achieved their stated objectives. As stated earlier, the main objective of the ADPs was to increase food production and farm incomes for the majority of the rural households, thus improving their standard of living and welfare. Certainly if the ADPs were able to attain this laudable objective, they would have largely reduced poverty in their defined project region, and would be acclaimed to have met a major part of their mandate.

4.1 Achievement of the ADPs and poverty alleviation

The achievements of the ADPs can be visualized from both the macro and micro perspective, all of which have direct bearing on poverty alleviation.

4.2 Macroeconomic impact of the ADPs.

The performance of the agricultural sector with respect to the level of production using the gross domestic product (GDP) contribution approach, exports and imports contributions prior to, and during the implementation of the ADP concept, provides insight into the macroeconomic impact of the ADPs and its direct contribution to poverty alleviation in Nigeria.

Available data showed that at independence in 1960, the contribution of agriculture to GDP was about 60 per cent. This share, however, declined over time, and reached its lowest level ever of 25.1 per cent between 1975-79. It picked up in the 1980s, and averaged 41.3 per cent between 1985-89. It stabilized at 38.4 per cent in the 1990s. Similarly, agricultural output stagnated at less than 1 per cent annual growth rate between 1970 and 1982, whereas population was growing at about 2.5 and 3.0 per cent per annum. A sharp decline was also observed in export crop production, while food output increased only marginally during this period. Consequently, food supply had to be augmented with large volumes of imports (Ojo, et al., 1993; Ukpong, et al., 1995), while the share of agriculture in total exports was considerably reduced. In fact, Nigeria which was previously the world's leading producer and exporter of palm-oil, became a net importer of vegetable oils by 1976. However, this poor trend was reversed in the late 1980s. Average annual growth rate of agricultural production was over 5 per cent between 1986 and 1995. Domestic food supply and agricultural exports also recorded remarkable improvements during this period. Indeed, apart from the rise in the share of traditional export crops (such

- ii. Large number of all-season rivers and a coastline of some 960 km bordering the Atlantic Ocean
- iii. A mild tropical climate with all year round high temperatures which do not pose any serious constraints to the growth of agricultural commodities
- iv. Rainfall that is generally abundant and fairly well distributed across the country all the year round

These natural endowments are capable of sustaining a wide variety of livestock, fish, crops and forestry products. Consequently, the optimal exploitation of these natural endowments through effective agricultural policies will help improve human capital and enable the sector fulfil all the development roles expected of it.

Agriculture is still largely small scale in Nigeria. The average size of holding is 2.82 hectares (FOS, 1995). The technology employed is still low as only 32 per cent reported the use of chemical fertilizers, 11 per cent used improved seedlings, 9 per cent used pesticides or insecticides and only 1, 4 and 5 per cent used vaccines, drugs, and supplementary feeds, respectively, in their livestock enterprises. Consequently, productivity is low and this has implications for poverty in the country. Hence, there is need for appropriate agricultural development policies and programmes, particularly as agriculture has continued to engage the largest proportion of the population in Nigeria. According to the Federal Office of Statistics (1995) agriculture employs about 60 per cent of the population, while sales, production and the professional groups account for 18.4, 8.2 and 7.0 per cent, respectively.

1.3 Role of agriculture

Among the roles conventionally ascribed to the agricultural sector in a growing economy are:

- i. the provision of adequate food for an increasing population, thus reducing the incidence of hunger, malnutrition and starvation
- ii. the supply of adequate raw materials to a growing industrial sector
- iii. the capacity to absorb a majority of rural workers
- iv. the provision of products which are a major source of foreign exchange earnings
- v. the provision of a market for the products from the industrial sector

All of these have bearing on poverty alleviation, especially the role of employment generation which is also paramount in empowering the poor to remove the barriers to wealth, through self-enhancement and self-actualization, particularly if they are so empowered to participate in decision affecting their welfare.

2. Literature Review

Stagnation in income and the inability to earn enough income for the attainment of basic needs and the achievement of self-esteem are at the root of poverty, and this has plagued the agricultural sector over the years. This is in spite of the fact that a number of policy measures have been put in place to ameliorate the situation. A survey of policy designs showed that the application of policies have been faulty in some cases.

The World Development Report (1990) considers four measures for increasing the incomes of the poor in the move towards poverty alleviation. These are:

- a. increasing the demand, and therefore, the price for those factors of production that the poor own (e.g. their own labour);
- b. transferring physical assets to the poor (e.g. land);
- c. providing social services to the poor (e.g. education) and;
- d. transferring current income to the poor (e.g. through cash or food subsidies)

Projects, the report noted, are one instrument which governments can use in order to implement these policies. The report went on to state that experience suggests that approaches that involve the poor in the design, implementation and evaluation of projects have been largely successful, particularly for the less complicated projects. Projects which have incorporated gender issues, as well as projects which make more and better use of human labour, were said to have also proven effective. The report notes that the major obstacle to alleviating poverty is not so much the availability of financial, human and capital resources, but the lack of commitment among governments, individuals and organizations towards the goal of poverty alleviation.

However, the Human Development Report (HRD, 1990) emphasized the importance of studying the multi-dimensional aspects of poverty, (nutrition, life expectancy, literacy etc.), rather than simply focusing upon income levels. In the face of continuing entrenched poverty, the HDR argues that greater emphasis must now be given to people and the choices that they are able to make. The

HDR argues that human development is a process of enlarging peoples choices. Given the choice, poor people would wish to:

- a. lead a long and healthy life
- b. receive education
- c. have access to resources needed for a decent standard of living.

The HDR argues that the measurement of GNP per capita provides only a limited indication of the degree of human choice which exists in a society. Income is only a means to an end, it is the uses to which income is put that determine the level of human development, not the income per-se. From this perspective, human development is measured in this report not by the yardstick of income alone, but by a more comprehensive index called the human development index (HDI). The HDI reflects in the main, life expectancy, literacy and command over the resources that ensures a decent standard of living (Arinze, 1995).

According to d'Silva and Bysouth (1992), macroeconomic policies are necessary to achieve and sustain economic growth, in the absence of which it is difficult to maintain high welfare expenditures to help the poor. They also stated that agricultural projects constitute one of the major avenues available to governments to alleviate poverty. But if projects are to achieve development goals, the forward and backward linkages of the projects need to be considered carefully. In addition, off-farm, non-agricultural employment would be needed by the rural poor to supplement, or in some cases, to substitute for farm income. They pointed out that the role of the public sector in poverty alleviation needs to be reconsidered. Their evidence from Asia indicates that ironically the increased involvement of government agencies in planning and implementing agriculture and rural development projects has undercut the abilities of many communities to carry out local development initiatives. At the same time, the failure of many government agencies to deliver services to the poor has resulted in a loss of faith among the poor in the capacity of government to improve the quality of their lives. These are pointers to the need for adequate monitoring and effective implementation of agricultural development projects in order to achieve the desired objectives.

Ojo (1986), made the point that the agricultural sector has the largest potential for creating employment opportunities in Nigeria. He identified two strategies for employment promotion in the agricultural sector: the first being to undertake a comprehensive modernization of the agricultural sector by boosting smallholder production; the second is to embark on special development schemes which are capable of substantial labour absorption. He advocated for an

integrated rural development approach which encompasses both agricultural and non-agricultural activities. The non-agricultural activities complement the purely agricultural components and help to bridge the gap between the rural and urban areas, as well as provide partial employment for those primarily engaged in agriculture, especially during the slack farm period. The most important components for effective rural employment, are rural industrialization based on agricultural and rural resources, the use of labour-intensive techniques in rural public works, the provision of adequate social overheads and the reorientation of the educational system. Ojo also remarked that the strategy for industrial development in the rural areas should be one that favours small-scale labour intensive industries based on the processing of agricultural commodities and the manufacture of simple agricultural inputs. In addition, the provision of educational facilities in the rural areas where agricultural activities are basically carried, out would enhance the skills of the farmer, increase productivity and enhance incomes. Although the agricultural extension service has played this role over the years, the ADPs appear to have somewhat performed this role with all the constraints.

3 Evolution of the Agricultural Development Project Concept in Nigeria

3.1 Objectives of the ADPs

Basically, all the ADPs had one common objective: to increase food production and thus improve the standard of living and welfare of the farming population. It proposes to achieve this goal through the introduction of simple techniques of farming that enhances the skill of the local populace enabling them to be self-sufficient in food production, and to sell any surplus in the local markets, thus generating additional demand in the rural sectors while enhancing farm income. The project design of all the ADPs encompassed four major areas: farm and crop development; civil works/infrastructural development; institutional support and training; and technical assistance through long-term and short-term consultancy.

In its widest sense, integrated rural development (IRD) programmes encompass agricultural and non-agricultural projects or activities (Ojo, 1986). The sole aim is to raise the level of agricultural productivity and rural income and in the process reduce the level of poverty in the rural areas. The country-wide ADPs are partially integrated rural development programmes with bias for agricultural activities. Since 1974, the World Bank has assisted Nigeria with a series of agricultural development projects, which have gone through various phases.

Most of the ADP projects were designed at a time when the economic environment of Nigeria was very favourable for large-scale investments due to

the high income from the country's oil resources. The oil *bonanza* began for the country in 1974 and lasted almost undisrupted until 1982. While the oil boom enabled the country to carry out large, capital-intensive investments, it adversely affected the agricultural sector, and incomes of those still engaged in the sector declined rapidly. The resulting rural-urban migration complicated the poverty problem and exacerbated social upheavals in the cities as the expected high paying employment were not forthcoming. An overvalued naira led to unfavourable prices for agricultural exports and encouraged the cheap import of food commodities. At the same time high wages in the non-agricultural sectors of the economy led to a widening wage rate/food crop price ratio, so that there was increased migration of rural people to the cities. Agricultural production stagnated, and the increasing food demands of a growing urban population were soaring at a rate in excess of 3 per cent per annum. These demands were not met by national production. Between 1970 and 1982, the share of agriculture in GDP fell from 45 per cent to 27 per cent, while agricultural contribution to exports declined sharply from 70 per cent to a mere 2 per cent over the same period. At the same time, food imports increased substantially. This scenario further strengthens the argument of the Dutch disease that the oil boom foisted on the Nigerian economy.

To ameliorate this problem and in consideration of the adverse macroeconomic environment, the federal government decided to use its oil revenue to strengthen several nationwide agricultural programmes. These include: Operation Feed the Nation, the Green Revolution, and the National Accelerated Food Production Programme. However, these programmes had little impact, because of inefficient implementation. The initial efforts at improving the agricultural sector were focused largely on capital-intensive ventures based on irrigation development and mechanized farming for the relatively small number of large-scale farms and plantation operators. The ADP concept, in contrast, directed its main thrust towards increased agricultural production in the small-holder community which comprises the bulk of the rural population. Thus, it was more pro-poor in design and implementation than earlier programmes.

3.2 Historical development of the ADP concept

The ADP approach was said to have been originally applied in East Africa, most prominently in Malawi. There, economic development in the rural areas had been promoted through a strategy which focused on the combination of improved technologies for food crops, enhanced delivery systems for agricultural extension and input supply, and improved infrastructure in a defined region of the country. A parastatal organizational structure with professional staff hired internationally was the prime mover for the implementation of this concept.

The concept was implemented in Nigeria in 1974 with the establishment of the first three enclave projects in the northern part of the country (Funtua, Gusau and Gombe ADPs). The chosen project regions were agro-ecologically favourable areas in the otherwise semi-arid north, and were located in the domain of several Local Government Councils (LGCs) of the three northern states of Bauchi (Gombe), Kaduna (Funtua) and Sokoto (Gusau). These areas were targeted because of their high poverty rate. The development approach focused on simple improved packages for some of the major food crops such as maize, sorghum and millet, combined with improvements in the extension service, the input supply system, the rural road network, and village water supply.

The apparent success of these early projects prompted both the Federal Government of Nigeria and the World Bank to quickly replicate the ADP model in other states. From 1975 to 1980, the number of projects grew from the original three to a total of nine enclave projects. A federal entity titled Agricultural Projects Monitoring and Evaluation Unit (APMEU) was established in 1975 to support the ADPs. By the end of the 1970s, pressure was mounting to expand the programme: first, both the state governments and the FGN were interested in enlarging the original enclave approach to encompass whole states; and second, many states which had not yet benefited from an ADP wanted to be included in the investment and support programme. Since the World Bank considered that it was unable to financially support such an enlarged nation-wide programme, the FGN decided to promote an accelerated development area (ADA) programme which was based on the ADP concept but with a somewhat simpler design. The FGN expected that it would be able to use oil revenues to finance the extension of the ADA concept to all states which had not yet benefited from an ADP. In March 1982, the FGN decided to cancel the ADA program due to funding constraints imposed by declining oil revenues. Only the three ADAs which had already begun (Imo, Borno, Gongola) were carried through. A decision was taken to accelerate the appraisal process of the ADPs by using federal government resources to establish a number of projects which will be grouped together and jointly financed by the federal government, the participating state government, and the World Bank. As a result, the first multi-state ADP (MSADP-1) comprising seven states, Anambra, Bendel, Benue, Cross River, Imo, Ogun and Plateau were launched in the later part of 1985 and 1986. These projects relied on local manpower and were simpler in design with focus on major crops. Following the success of these first MSADP projects, the second multi-state ADP project was launched. The second MSADP project covered Gongola, Kwara and Niger States. The lessons learnt from earlier projects were taken into account in the design of the third MSADP project. The third MSADP

included Oyo, Ondo, Lagos and Rivers and the project incorporated support for fisheries in the maritime states.

Projects like Borno, Kaduna, Katsina, and Abuja were also operational but without World Bank loan. Thus, by 1988, the entire country was covered by the ADP system with networks spreading to all the local government areas in each state.

In August 1990, when the loan for the first set of statewide ADPs terminated, an Agricultural Development Fund (ADF) was conceived to fund these projects. However, the ADF loan by the World Bank, was split into National Agricultural Technology Support Project (NATSP) and the National Fadama Development project (NFDP). Both loans became effective in 1992. The NATSP provides assistance for technology adoption and dissemination in Bauchi, Kano and Sokoto states. It was designed to support the improvement of both upland and irrigation farming and extension, on-farm adaptive research and overall project management under Fadama Development Projects. The NFDP provides funds for Fadama Development in Nigeria by concentrating on irrigation with the use of ground water in already cultivated fadamas.

3.4 Activities of the ADPs

3.4.1 *The farm and crop development component*

The ADPs introduced simple improved agricultural practices and higher yielding varieties of the basic food crops (maize, sorghum, millet, rice, yam, cassava, groundnut, and cowpea). The ADPs made improvements in the extension system and initiated a better system of input procurement and distribution. Fertilizer was the key input to enhance production; the ADPs were to ensure the local availability of fertilizer to farmers and to inform them of its potential benefits while a heavy subsidy policy would make it attractive. The provision of improved seeds was to be supported by enlarged and improved seed multiplication services based on project farms for the production of foundation seeds, and outgrowers for seed multiplication.

This package (which was complemented by the construction of feeder roads and other infrastructure), was typically called the basic service package (BSP). In addition to this, all projects extended an advanced service package (ASP): in the case of some southern ADPs, this consisted of a minimum tillage scheme combined with the promotion of tractor hire services, while in the northern ADPs it was mainly focused on the promotion of irrigated agriculture in the fadama areas. Land use planning (LUP) units were to collect base data on the land potential, offer advisory services to needy clients on development opportunities, and identify areas in need for the implementation of soil conservation measures.

Furthermore, the LUPs were to assist in the identification of sites for farmer service centres, road alignments, forestry plantations, fadama lands, and other project-related activities. In addition to this common farm and crop development package, the northern projects included some other components: for Bauchi, a cattle fattening scheme was proposed, while the Kano project included both a work-bull promotion scheme and the establishment of forest nurseries. In the maritime states fishery development packages were included.

The propagation of these programmes required a re-organization of the existing field services. For that purpose the ADPs were to set up project extension services based on the principles of the training and visit (T&V) system. This involved the transfer of agricultural extension personnel of the state Ministry of Agriculture and Natural Resources (MANR), and in some cases from LGCs, to one single administrative and technical authority – the extension section of the ADP. Village extension agents (VEAs) were to be used solely for extension. Loan recovery and input distribution were to be handled by other specialized staff. Mobility of the extension section was to be improved by providing adequate transport (cars for project and zonal coordinators, and motorbikes for VEAs and their supervisors). These activities were so comprehensive with checks and balances in order not to compromise the objectives of poverty alleviation that rampant corruption would have caused.

3.4.2 *Civil works/infrastructural development*

In the civil works and rural infrastructure components, all projects included the provision of feeder roads, the construction of farmer service centres (FSC) for input supply in the rural areas, and the establishment of project offices and staff houses. With the exception of IADP, all projects included the improvement of rural water supply through well construction and small dams. In addition, BSADP was to provide a number of improved agricultural storage facilities. Every ADP except ONADEP, expressly stated the need for training of LGC staff with regard to construction and maintenance of rural infrastructure. The focus on the improvement of rural infrastructure was meant to ensure free flow of farm products from the rural areas to the market, and also to facilitate information flow necessary for self enhancement.

3.4.3 *Institutional support and training*

The main institution building components of the project were directed at establishing or enhancing the capacity of the ADPs themselves to implement the development programmes under the policy guidance and supervision of committees representing the state ministries. Provision was also made, however, for training of staff of local government council (LGC). All projects were to

capita household expenditure measure of poverty showed that, 71 per cent of Nigerian households are poor, out of which 36 per cent are classified as core poor and about 35 per cent moderately poor (Federal Office of Statistics, 1995).

Poverty has a lot of detrimental effects and constitutes a threat to sustainable human development. Empowerment of the poor is the key strategy to the abolition of poverty. The poor themselves must be empowered to remove the barriers keeping them in the poverty trap. This paper suggests that in an agrarian economy like ours where most of the population is engaged in farming, agricultural projects intended to enhance agricultural income constitute one of the major means available to governments for poverty alleviation. In the first section the role of agriculture in poverty alleviation is highlighted. In section two some relevant literature will be reviewed as a background to the appraisal of the relevance of the Agricultural Development Projects (ADPs) to poverty alleviation in Nigeria. Section three traces the historical development of the ADPs, its objectives and components. Section four is devoted to the appraisal of the ADP system and its contributions to poverty alleviation. The final part summarizes and concludes the paper with some suggestions on how to sustain the ADP system.

1.1 Role of agriculture in poverty alleviation

Certainly, all sectors of the economy are capable of producing positive effects on poverty alleviation if appropriate policies and programmes are mapped out. However, the major premise of this paper is that, in the foreseeable future, a well managed agricultural development policy has the largest potential for alleviating poverty in Nigeria. This can be justified by the resource endowment of the country and the role agriculture is expected to play in a growing economy like ours. Furthermore, the development of the agricultural sector, should enhance the incomes of the core poor who constitute the bulk of the able bodied rural population. The neglect of the sector in the past has had adverse consequences for human capital development, agricultural productivity and economic growth, thus compromising poverty alleviation.

1.2 Nigeria's resource endowment

Nigeria is an agricultural country abundantly endowed with natural resources such as:

1. Large expanse of relatively fertile land capable of supporting virtually all types of tropical and some sub-tropical crops (about 75 per cent of the 941,849 km² total land area of the country is cultivable)

as cocoa, palm kernel and rubber) in the total volume of agricultural exports, during the 1980s, new commodities, including staple foods, entered the export basket.

Although all the improved performance recorded in the agricultural sector since the late 1980s cannot be attributed to the ADPs alone, there is substantial evidence to confirm that a significant proportion (particularly in the area of food production) is as a result of the activities of the ADPs, since they work with the smallholder farmers who produce about 90 per cent of the food consumed in the country. Since the late 1980s with the establishment of an ADP in every state, more farmers have been reached by the extension agents and improved agricultural practices have been taught to them. This (improved technology) in addition to the infrastructure provided, have definitely contributed directly to the improved performance of the agricultural sector in recent years, thus reversing the food crisis of the 1970s. Inability to feed is one of the major indicators of poverty. That Nigeria is one of the countries in Africa that does not depend on food aid, but rather it exports food to all the neighbouring countries is good testimony to the poverty alleviation impact of the activities of the ADPs in recent years. Further analysis of relevant macroeconomic aggregates confirm statements earlier made on the role of ADPs in poverty alleviation in Nigeria. With the coverage of the entire country by the ADP projects in the late 1980s a more precise statement could be made on their impact. Before 1980, the share of agriculture in total GDP was unstable, recording a native growth rate of 1.5 per cent in the period 1970-75 on an average basis. Between 1976-1980, a growth rate of 2.9 per cent was recorded, the highest in the period 1960-1980. In the following five years, the average annual growth rate increased to 4.9 per cent. The highest level of 5.3 per cent was recorded between 1986 and 1990 (table 2).

A distinction between rural and urban consumer price index for food showed that a general upward trend was recorded during the period under review. However, the rural consumer price index recorded lower figures during the review period, except during 1971-75 period. This analysis showed that prices for food were more stable in the rural than in the urban areas indicating increased food production in the rural areas due largely to the activities of the ADPs (table 2).

A close examination of the national unemployment rate showed that unemployment is more acute in the urban centres than in the rural areas. This is attributable to the disparity in the differentials in the occupational requirements in the two settings. Whereas, farming is the predominant occupation in the rural areas, the urban centres require higher level skills that most migrants, especially from the rural areas do not possess. Thus, the activities of the ADPs have made it possible for more people to be employed in relative terms in the rural areas

than in the urban centres. In fact most of the able-bodied are gainfully employed in agriculture in the rural areas and the activities of the ADPs has helped to increase their productivity. The same cannot be said in the urban areas, where industrial employment is key-based, resulting in massive unemployment (table 3).

4.3 Micro-economic impact of the ADPs

The micro-economic impacts of the projects can be appropriately analysed under agricultural impact, infrastructural development and institutional improvements.

4.3.1 Agricultural impact

The projects intend to achieve production increases largely through crop yield increases by the use of improved technology and increased production inputs. On the average, yields have increased for the major crops in Nigeria since the inception of the ADPs, compared with the period before the establishment of the ADPs (table 1). Yield per hectare for soyabean, cassava, maize, cotton, cocoyam and sorghum grew by 122.5, 39.2, 33.6, 26.1, 23.3 and 22.3 per cent respectively between 1976-1994, when the ADPs were in place compared with the pre-ADP period of 1966-75. This is the outcome of the extensive extension coverage by the ADPs. Between 1991 and 1995 alone, for which consistent data were available from all the ADPs, a total of 36,012,000 farm families were covered, while 1,139,700 special plots for agricultural training (SPAT) were established, and 8,894 on-farm station trials were carried out (table 4).

Table 1. Estimated Average Yield per Hectare of Major Crops in Nigeria (in kg/ha)

Crop	1966-75 (1)	1976-85 (2)	1994 (3)	Percentage change between		Average growth rate
				(1) & (2)	(2) & (3)	
Cassava	9,559	9,361	10,767	(2.1)	15.0	6.5
Yam	8,964	10,855	9,976	21.1	(8.1)	6.5
Maize	898	1,322	1,588	47.2	20.1	33.7
Sorghum	687	975	1,001	41.9	2.7	22.3
Groundnut	676	768	850	13.6	10.7	12.1
Cowpea	215	374	391	74.0	4.5	39.2
Rice	1,387	1,864	1,283	34.4	(31.2)	1.6
Millet	633	861	1,000	36.0	16.1	26.1
Cotton	671	974	657	45.2	(32.5)	6.3
Soyabean	319	867	1,503	171.8	73.4	122.6
Cocoyam	5,445	4,497	7,378	(17.4)	64.1	23.3

Source: Computed from data obtained from FOS and APEMU publications.

Regarding specific development programmes destined to have an agricultural production impact, the fadama development programme was very successful. All projects exceeded the set targets significantly in fadama development, and gained

Table 2. Growth Rates

	Growth rates			
			Consumer price index (food)	
	Total GDP	Agric GDP	Rural	Urban
1960-1965	4.9	1.8	n.a	n.a
1966-1970	6.3	2.0	n.a	n.a
1971-1975	8.4	-1.5	24.8	22.3
1976-1980	4.0	2.9	40.0	40.6
1981-1985	-5.7	4.9	100.0	100.0
1986-1990	5.6	5.3	307.3	309.5
1990-1995	2.0	1.3	2297.0	2358.0

ample engineering know-how which encouraged the extension of the program under the National Fadama Project. The technical problems with regard to tubewell, washbore and pump installation were reported to have been mastered satisfactorily and local mechanics are carrying out standard repairs and maintenance on the pumps and irrigation equipment. The crop production aspects of the programme received the attention of the extension service and the Medium Term Review Meetings (MTRMs) with regard to the provision of seeds, the application of fertilizer and the husbandry methods of the traditional crops grown in the fadama areas (mostly high value vegetable crops and wheat). Output of these areas has significantly increased, and raised the income of the beneficiaries. A poverty assessment study in the Sokoto State Agricultural and Community Development Project (1995) revealed that the irrigations' average annual income was above the poverty line, thus establishing that fadama farming is a way out of poverty. Using their estimated parameters, it was observed that those without access to fadama land were more than two times as likely to be poor, as those with fadama land, when the other variables were held at their means. A further impact of fadama land development is that it has created income opportunities for casual labourers in the surrounding areas, so that the benefits of this development are not just limited to the group of farmers who have access to the fadama land.

4.3.2 *Infrastructural development impact*

Roads: The roads which have been rehabilitated or newly constructed through the ADPs in rural areas in Nigeria constitute approximately one sixth of the tertiary

Table 3. National Unemployment rate (%)

End of Period	Urban	Rural
Dec. 1985	9.8	5.2
Mar. 1986	9.1	5.6
Jun. 1986	11.0	4.9
Sep. 1986	10.0	4.1
Dec. 1986	9.1	4.6
Mar. 1987	8.7	3.5
Jun. 1987	8.6	4.9
Sep. 1987	12.2	6.2
Dec. 1987	9.8	6.1
Mar. 1988	7.3	4.6
Jun. 1988	7.2	3.9
Sep. 1988	10.0	3.8
Dec. 1988	7.8	4.8
Mar. 1989	8.7	3.5
Jun. 1989	9.2	3.0
Sep. 1989	8.1	3.7
Dec. 1989	7.5	3.2
Mar. 1990	6.9	3.0
Jun. 1990	5.3	2.6
Sep. 1990	4.8	2.8
Dec. 1990	5.9	3.0
Mar. 1991	5.9	3.6
Jun. 1991	5.5	3.9
Sep. 1991	4.4	2.6
Dec. 1991	4.9	2.7
Mar. 1992	4.7	3.1
Jun. 1992	4.2	3.0
Sep. 1992	5.8	2.6
Dec. 1992	4.6	3.2
Mar. 1993	4.2	4.0
Jun. 1993	n.a.	n.a.
Sep. 1993	4.1	3.2
Dec. 1993	3.8	2.5
Mar. 1994	2.9	2.0
Jun. 1994	2.5	2.5
Sep. 1994	3.5	1.1
Dec. 1994	3.2	1.7
Mar. 1995	3.1	1.8
Jun. 1995	3.6	1.4
Sep. 1995	3.8	1.7
Dec. 1995	3.9	1.6
Mar. 1996	3.5	2.3
Jun. 1996	5.9	3.4

road network in the states or parts of the states concerned. The programme was a massive undertaking and has significantly improved accessibility to large areas of the respective states. For instance from 1991 to 1995 alone a total of 3,147.8 km and 5826.2 km of roads were constructed and rehabilitated respectively by all the ADPs (table 4).

Rural water supply: This programme was impressive and exceeded its targets in most ADPs by an impressive margin. Between 1991 and 1995 a total of 28,987.7 water points (earthdams, tubewells, washbores and boreholes) were constructed (table 2). Their benefits would be realized in an improved level of human health and economic benefits, in time saved in water collection by rural women. Maintenance of boreholes and wells with villager participation has not been problematic.

4.3.3 *Institutional and manpower development*

One of the most positive aspects of the ADPs was in human resource development. This was especially so in project staff, and to a much less extent in special target groups (pump attendants, etc.) Between 1991 and 1995 a total number of 179,026 people were trained (table 4).

Commercial services: The FASCOMs have generally not been able to develop into viable commercial organizations. This was partly attributed to their obligation to handle fertilizer distribution without a profit margin and to refinance its transport costs to FSCs, often without reimbursement. However, Ondo, Oyo and Lagos States established agricultural input supply companies (AISC) from their commercial services programme in recent years because they were given a free hand to operate (privatization).

Cooperative groups: The ADP concept also incorporated group formation activities. The group formation concept such as the Women in Agriculture (WIA) and other beneficiary user associations have enabled these groups to embark on laudable projects which benefited the individuals, groups and their communities. A total of 12,097 women in agricultural groups were formed between 1992 and 1995 (table 4).

4.4 **Challenges/weaknesses of the ADPs system**

There are concerns, however, about the long-term sustainability of the traditional mixed/relay cropping system in Nigeria, due to the increasing challenge of the *striga* weed problem. Similarly, intensive development of the fadama has nematode and other pest challenges, and is faced also with emerging marketing

problems, both of which indicate a need for diversification into additional high value crops. These types of farming problems have to be adequately addressed by the agricultural research institutions.

While the sustainability of the rural water supply investments look secure, this is not the case with the road and building infrastructure investments, because a system of upkeep and maintenance is not in place. The ADPs appear to have strong political support to continue as agricultural development implementing agents in the states. This however, has not been translated into support in budgetary funding, so that most ADPs have experienced serious funding constraints when Bank loan support declined. The constrained budget situation gives some priority to a critical review of the respective roles and functions of the regular state ministry departments and the ADPs.

Frequent changes in state government political leadership and ADP management staff affected decision making down the scale resulting in delays during project implementation. The low level of remuneration has increased the rate of turnover of staff, especially in the infrastructural and monitoring and evaluation departments where attractive opportunities are available in the private sector for these staff. If these problems are adequately tackled, the ADPs would have achieved more remarkable success in alleviating poverty in Nigeria.

5. Summary, Conclusion and Recommendations

This paper has attempted to articulate the definition of poverty and review some relevant literature as a basis for the appraisal of the effectiveness of the World Bank assisted agricultural development projects in poverty alleviation in Nigeria. Poverty as defined by Greenwald and Associates (1965), is a condition in which income is insufficient to meet subsistence needs. Thus, based on household expenditure, 71 per cent of Nigerian households were classified as poor, out of which 36 per cent were classified as core poor by the FOS (1996). The World Development Report identified four measures as having major potential to increase the incomes of the poor. These are (a) increasing the demand, and therefore, the price for those factors of production that the poor own (e.g. their own labour); transferring physical assets to the poor (e.g. land); providing social services to the poor (e.g. education) and; transferring current income to the poor (e.g. through cash or food subsidies).

A review of the concept of the World Bank assisted agricultural development projects in Nigeria from 1975 to 1995 revealed that the objectives of the ADPs and the strategies adopted were in consonance with measures proposed in the World Development Report for increasing the income of the poor.

Basically, all the ADPs had one common objective: to increase food production and thus farm incomes for the majority of the rural households in the

defined project region, thus improving the standard of living and welfare of the rural poor. These are, however, the major objectives of poverty alleviation programmes, hence the ADP concept can be a major input into poverty alleviation. This laudable objective was to be achieved through farm and crop development programmes and services, rural infrastructure, institution building, human resources development, and substantial technical assistance. These diverse components, therefore, qualify the ADPs as an integrated rural development programme.

A review of the various phases of the ADP system from the initial enclaves in the 1970s to statewide ADPs in the 1980s and multi-state/subsector programmes in the 1990s revealed that the ADPs have contributed significantly to the improvement in the living standards of the rural population, as measured by aggregate agricultural output particularly food production and other indicators, like educational attainments, occupational status, water supply, ownership of farm assets and livestock, transportation measures and roads, sources and use of farm inputs and credit. Farmers were quite responsive to the various useful innovations extended to them, hence the positive impact on production and farm income. Where adoption of technology promoted or facilitated by the projects (e.g., in improved varieties, crop husbandry measures, postharvest practices) has led to increased productivity, in most cases this impact could be expected to continue in the near/medium term. The *fadama* development component in particular has helped to extend the farming season, thus increasing the output and income of rural households. This has had a significant impact on poverty alleviation in the project areas. This is probably why the sectoral distribution of poverty in Nigeria, as revealed by the FOS study, is 77 per cent for the urban households and 68 per cent for the rural households, further confirming the relevance of the ADP concept to poverty alleviation in Nigeria.

The ADP concept has put the rural smallholder sector at the center of government agricultural development strategy. Considering the fact that agriculture constitutes about 40 per cent of Nigeria's GDP, employs almost three-quarters of Nigerians and is yet to be substantially modernized, the ADP system should be sustained, so as to continue to reap the two-fold benefit of developing the agricultural sector and alleviating poverty in the rural sector which accommodates the majority of Nigerians.

That the World Bank loan has terminated does not mean the ADP system should be terminated. The basic structures and institutions necessary for delivery of critical services to the smallholder farmers for increased agricultural production in all the states of the federation are already in place. With some reorganization at the state and federal levels and committed funding, the ADPs are sustainable. The policy of deduction of state contributions at source should

Table 4. Operational Data on Agricultural Development Project (ADPs)

	Percentage change over preceeding years								
	1991 (1)	1992 (2)	1993 1/ (3)	1994 1/ (4)	1995 2/ (5)	1992 (6)	1993 (7)	1994 (8)	1995 (9)
Sources of fund ('M' million)	448.0	1,217.5	1,493.5	2,119.7	1,851.4	171.8	22.7	41.9	-12.7
(a) IBRD/IFAD	241.9	804.7	951.7	1,375.0	1,221.5	232.7	18.3	44.5	-11.2
(b) Federal	68.0	80.0	134.9	135.2	74.6	17.6	68.6	0.2	-44.8
(c) State	129.8	296.0	363.8	561.2	496.8	128.0	22.9	54.3	-11.5
(d) Others	8.3	36.8	43.1	48.4	58.6	342.5	17.2	12.2	21.2
Infrastructure									
(a) Road (km)									
i. Constructed	197.0	1,014.5	1,204.7	631.5	100.1	415.0	18.8	-47.6	-84.1
ii. Maintenance	1,949.0	3,498.8	1,387.9	-	-	127.7	-60.3	-100.0	-
iii. Rehabilitated	601.0	2,277.7	1,078.9	1,655.2	213.4	279.0	-52.6	-	-
(b) Earth dams, Tubeewells, Boreholes and Washbores (No.)	5,190.0	5,523.0	325.7	8,108.0	9,809.0	6.4	-94.1	2389.4	21.0
(c) Farm service centre/ Store (No.)	383.0	722.0	562.0	505.0	541.0	88.5	-22.2	-10.1	7.1
(d) Fish ponds (No.)	-	279.0	260.0	779.0	212.0	-	-6.8	199.6	-72.8
(e) Irrigation development (Ha.)	7,658.0	2,786	36,617.0	34,510.0	2,613.3	-63.6	1214.3	-5.8	-92.4
Farm inputs supplied									
(a) Fertilizer ('000 tonnes)	344.7	1,410.0	331.9	208.7	542.5	53.2	-76.5	-37.1	161.3
(b) Seed ('000 tonnes)	-	1.4	12.9	47.2	1.3	-	821.4	265.9	-97.2
(c) Root/tubers (bundles)	-	9,353.0	26,088.0	1,304.6	9,063.0	-	178.9	-95.0	594.7
(d) Liquid agrochemicals ('000 litres)	769.7	303.5	110.0	69.0	105.4	-60.6	-63.8	-37.3	52.8
(e) Solid agrochemicals (tonnes)	-	384.3	28.0	38.4	25.8	-	-92.7	37.1	-32.8
(f) Pumps (No.)	6,052.0	5,758.0	2,042.0	1,882.0	4,072.0	-7.0	-64.5	-7.8	116.4
(g) Ox - Ridges	-	6,269.0	5,249.0	5,904.0	1,483.0	-	-16.3	12.5	-74.9
(h) Other farm implements	-	16,995.0	6,389.0	852.0	1,539.0	-	-62.4	-86.7	80.6

						Percentage change over preceeding years			
	1991 (1)	1992 (2)	1993 1/ (3)	1994 1/ (4)	1995 2/ (5)	1992 (6)	1993 (7)	1994 (8)	1995 (9)
Extension and Training									
(a) Farm families covered ('000)	4,764.0	6,090.5	5,823.7	11,522.5	7,809.5	27.8	-4.4	97.9	-32.2
(b) Extension agents (No.)	-	7,804.0	6,412.0	7,027.0	6,563.0	-	-17.8	9.6	-6.6
(c) SPAT 3/. Plots established (No.) ('000)	90.6	286.9	277.7	228.2	235.6	216.7	-3.2	-17.8	3.2
(d) On farm/ station trials	-	2,620.0	2,558.0	1,911.0	1,729.0	-	-2.4	-25.3	-9.5
(e) Women in agriculture group established (No.)	-	3,301.0	2,721.0	2,074.0	3,696.0	-	-17.6	-23.8	78.2
(f) Number Trained ('000)	159,000.0	6,526.0	4,481.0	4,498.0	4,411.0	-95.9	-31.3	0.4	-1.9
Production (within project area) Output ('000 tonnes)									
Maize	428.8	N.A	357.1	N.A	1,232.5	-100.0	-	-100.0	-
Rice	-	N.A	137.3	N.A	302.5	-	-	-	-
Millet	-	N.A	269.1	N.A	N.A	-	-	-	-
Sorghum	-	N.A	596.9	N.A	35.0	-	-	-100.0	-
Cowpea	161.5	N.A	94.1	N.A	4.3	-100.0	-	-100.0	-
Cassava	47.8	N.A	2,226.6	N.A	6,477.8	-98.8	-	-100.0	-
Yam	1,978.2	N.A	1,579.3	N.A	6,289.1	-100.0	-	-	-
Cotton	N.A	N.A	68.0	N.A	-	-	-	-100.0	-
Groundnut	138.8	N.A	74.4	N.A	3.1	-100.0	-	-	-
Plantain	N.A	N.A	-	N.A	1,083.6	-	-	-	-
Cocoyam	48.4	N.A	-	N.A	-	-100.0	-	-	-
Irish Potato	N.A	N.A	-	N.A	5,579.7	-	-	-	-
Melon	5.0	N.A	-	N.A	-	-100.0	-	-	-
Soyabean	6.5	N.A	-	N.A	-	N.A	-	-	-
Wheat	N.A	N.A	-	N.A	753.2	N.A	-	-	-

Notes:

- 1/ Revised
- 2/ Provisional
- 3/ Special plot for agricultural training (SPAT)

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