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Effects of Oke-Oyi Irrigation Project on Food Production in Kwara State, Nigeria

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Abstract

The River Basin Development approach was adopted as reaction to the poor food situation in Nigeria. The study examines the contribution of the Lower Niger River Basin Development Authority's irrigation project in Oke-Oyi, to food production in the area. Two kinds of questionnaire were used to collect information on production target, achieved level and problems faced in the project. Analysis of the data showed that, though, the target could not be met the achieved level was impressive. The paper further suggested ways of making the project more productive.

Introduction

The establishment of Lower Niger River Basin Development Authority in 1976, came as a result of the poor food situation in Nigeria. According to the CBN/NISER Report (1991), between 1960 and 1980, crop production was declining at an average rate of 13% per annum while, food production was declining at an average of 0.4% per annum. The report went further to conclude that the country became a food deficit country to the extent that a total of N7.57 billion was spent on the importation of agricultural products between 1981 and 1985. Also, between 1969 and 1981, Nigeria recorded a decline of 15% in the production of millet and guinea corn, 30% and 20% decline in the production of yams and beans respectively (Federal Office of Statistics, 1983).

According to Ojo (1991), the Federal Government of Nigeria has committed enormous resources to the River Basin Development Authorities over the years. He further observed that, while a total of N778.1 million and N2.094 billion was spent respectively by 1985 all the Basin Authorities irrigated only 15% of the projected 536,282 hectares. The Niger River Basin Development Authority received over N500 million from the Federal Government between 1976 and 1991 (Niger River Basin Development Authority, 1992a). However, as at 1992, the National irrigation capacity was below 5% (NRBDA, 1992b). Arnon (1981) Worlf (1995) and Upton (1996) all agreed that agricultural productivity is higher in irrigated areas. Upton (1996) further noted that, with only 17% of the world's cropped land under irrigation, irrigated areas account for 36% of total output of crops. However, Wallace (1981), and Abolu (1982) observed that the Kano irrigation and South Chad irrigation

identified other problems like official corruption and technical problems like burst pipelines. The Kano irrigation project for instance, recorded 5000 tons of wheat during the 1981-1982 dry season, as against the official target of a minimum of 30,000 tons (Gunila and Bjorn, 1985). Using the examples of Mali and Kenya Wile and McLoughlin (1967) demonstrated how improper planning and implementation can lead to low productivity. They further explained how inadequate knowledge about soil, topography and rainfall can lead to the failure of irrigation projects.

On the other hand Omara-Ojunga (1992) reported that the Gezira irrigation scheme in Sudan, recorded high level of productivity. The success resulted from the well planned production systems, careful site selection, good management control and incentive to farmers. Balogun and Ukeje (1986) however, agreed that, crop yields in the Niger River basin projects, Nigeria were higher than those recorded by local farmers. The output could however, not justify the huge investment in the project. Balogun and Ukeje (1986) noted that, while it cost N1,998 to prepare one hectare of land in the Niger River Basin, it costs just N36.11 in the Funtua Agricultural Development Project. They further identified the problems of the Niger River Basin Authorities in Nigeria as that of manpower and planning, inadequate funding, shortage of machinery and spare parts and difficulty in acquiring land for expansion. This paper thus, focuses on the contribution of the Lower Niger River Basin Development Authority's irrigation project at Oke-Oyi, to agricultural production in the area.

Study Area.

The study area is Oke-Oyi which is located about 20km to the North-East of Ilorin ($8^{\circ}31'N$, $4^{\circ}33'E$). see fig 1.

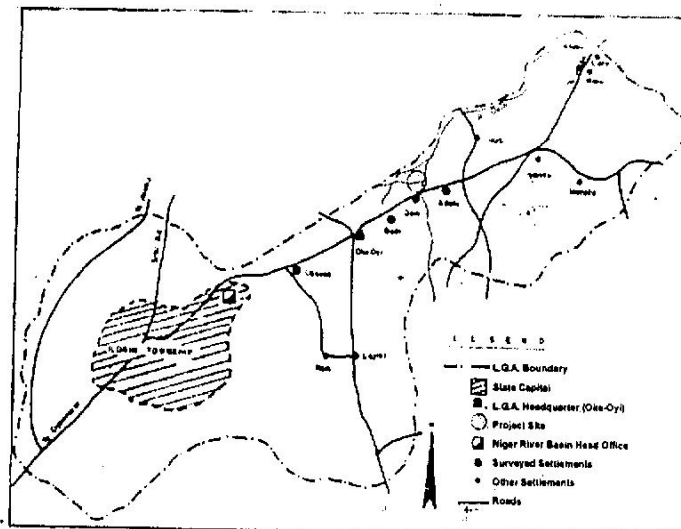


FIG. 1. MAP OF ILORIN EAST, WEST AND SOUTH LGAs SHOWING ILORIN, OKE-OYI AND ENVIRONS. SOURCE: LOWER NIGER RIVER BASIN DEVELOPMENT AUTHORITY.

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The climate is the Tropical wet and dry climate. The wet season is observed from May to October. The dry season begins in November and ends in March (Oyegun, 1982).

The area falls within the wooded Savanna, where trees like the locust tree, Akee Apple and Shea-butter are abundant.

The topography consists of gently undulating plain with some low undulating hills.

The Oke-Oyi irrigation scheme was established by the Lower Niger River Basin Development Authority in 1981. Though, a total of 160 hectares was cleared at inception, only 85 hectares were cropped. During the 1981/82 dry planting season, forty farmers that participated in the project produced 254 tons of maize (Performance Report of the Niger River Basin Authority 1977-1982).

Maize, cowpea, soya beans, guinea corn and rice are planted in the wet season, while okro, cowpea, maize, vegetables and rice are planted in the dry season.

The construction of a concrete weir across the Osin river was completed in 1985. The weir is capable of impounding up to 200,000 cubic metres of water and can be used to irrigate up to 100 hectares of farmland (Lower Niger R.B.D.A. Newsletter 1985).

Methodology

Data used in the study were obtained from primary source, through administration of questionnaire. Two types of questionnaire were used to conduct two kinds of survey. The management questionnaire (A) was used to interview management of the Lower Basin Authority. This questionnaire was used to obtain information on the background of the project, production targets achieved, levels of operational problems encountered in the project. Questionnaire (B) was administered to the farmers directly participating in the project. This involved random sampling of 100 of the 400 registered farmers participating in the project during the 1995/96 dry season. These sampled farmers who constituted 25% of participating farmers were expected to be representative of the population. This questionnaire was used to obtain information on the origin of farmers, crops planted, output for each crop, incomes, services enjoyed and method of disposal of crops. This questionnaire was administered to the farmers in the month of January, when the dry season farming was in progress.

Data Analysis and Discussion of Results

Allocation of Land to Crops

The major crops produced in the Oke-Oyi irrigation project are o

Table 1: Allocation of land to crops in the 1994/95 dry season

Crops	Hectare	Percentage of land allocated
Maize	7.5	15
Cowpea	2.5	5
Okro	37.5	75
Onion	1	2
Vegetables	1.5	3
Total	50	100

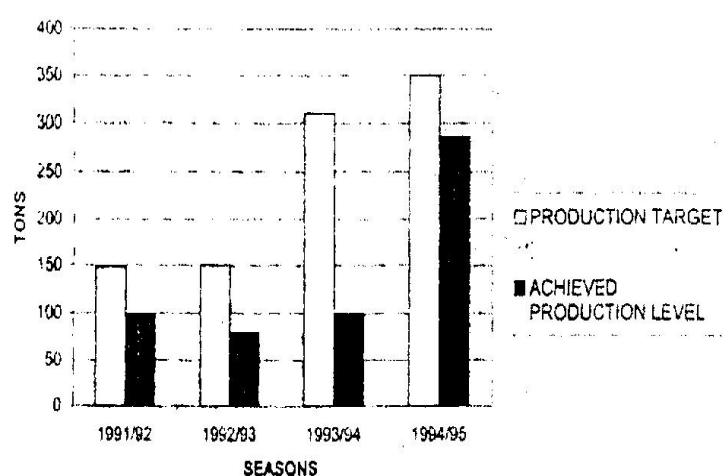
Source: Field Survey, 1996

Production Level in the Oke-Oyi Irrigation Project

When the project began during the 1981/82 season, 85 hectares of land was cropped, from which a total of 254 tons of maize was realized. This is an average of 2.98 tons per hectare. By the 1995/96 season when the survey was conducted a target of 510 tons or 6.37 tons had been set.

The production target and the actual or achieved levels of production recorded for the period of 1991/92 to 1994/95 seasons are shown in table 2. This is also reflected graphically in (Fig. 2).

FIG. 2: PRODUCTION LEVEL IN THE PROJECT 1991/92 TO 1994/95 IRRIGATION SEASONS



Source: Field Survey, 1996

Table 2: Production level in the project in the 1991/92 to 1994/95 irrigation Seasons

Seasons	Hectare	Production target(tons)	Achieved Production Lev (tons)
1991/92	17.4	148(8.5/ha)	100 (5.75/ha)
1992/93	19.6	150(7.65)	80(4.0)
1993/94	42	310(7.38)	100(2.38)
1994/95	50	350 (7.0)	286 (5.72)
Total	129	958	566

Source: Field Survey, 1996

By the 1991/92 season, the output was 100 tons. With only 17.4 h cultivated, this amounts to an average of 5.75 tons per hectare. With a production target of 148 tons.

(8.5 tons/ha) for the 1991/92 season the achieved production level (100 tons) was 71.4% of the target.

During the 1993/94 season, with 42 hectares under cultivation, a low output of 2.3 tons per hectare was recorded. This unimpressive production level was attributed to dam failure. Part of the concrete weir collapsed during the season and an acute shortage of water was experienced in the project. The production target for the 1994/95 season was 350 tons. The achieved level for the season was 286 (5.72 tons/ha). This is 81.7% of the targeted production level.

The chi-square was used to test whether there is any significant difference between the achieved production level and the production target for the 1991/92 to 1994/95 seasons. The decision rule for the test is that the null hypothesis must be rejected with not less than 95% confidence. The level of significance was thus, be 0.05.

The calculated X^2 value (1.09) is less than the table value (7.81) we therefore accept the null hypotheses that there is no significant difference between production target and the actual production level.

Problems Facing the Oke-Oyi Irrigation Project

Some problems were identified as militating against the success of the project. The management of the Authority identified the problems of inadequate finance, shortage of water, lack of enough machinery, inadequate supply of pesticides and shortage of fuel for machinery.

Inadequate finance for instance, has made it impossible to regularly desilt the reservoir. Apart from reducing the capacity to impound water, silting can lead to collapse of the weir. Farmers therefore, get water supplied to their plots once in four days. Also, only two of the Authority's tractors were functional during the

1995/96 season. These tractors were also, serving other projects of the Authority in other areas.

The sampled farmers in addition, identified other problems. For example, 35% of the sampled farmers complained that the high fees charged prevented them from acquiring more plots. On the other hand 13% of the sampled farmers identified staff inefficiency and official corruption as problems to the project. They especially accused the tractor drivers of favouritism.

Conclusion

The study examined the contribution of the Oke-Oyi irrigation project to agricultural production in the area. The establishment of the project has allowed dry season irrigation of various kinds of crops through irrigation. Though, the production target for the period under study was 958 tons, the achieved production of 566 tons could be said to be impressive. This is because, the achieved production was 69.25% of the targeted level.

The achieved production level could have been higher but for the problems identified as militating against the smooth operation of the project. Important among the problems are inadequate finance shortage of water, inadequate supply of machinery and corruption among some of the officials in charge of the project.

Higher production level could be achieved through better financing of the project. This would ensure adequate maintenance of equipment and infrastructure and the regular desilting of the dam. The citing and proper management of projects of this nature could be the solution to Nigeria's poor food situation.

References

- Arnon, I. (1981) *Modernization of Agriculture in Developing Countries: Resource Potentials and problems*. John Wiley. New York
- Balogun, E. and Ukeje, E. U. (1986) The impact of River Basin Development Authorities in Nigerian Agriculture: A case of Niger River Basin Development Authority. *CBN Economic and Financial Review*. 24(2).
- CBN/NISER Report (1991) *The Impact of SAP on Nigerian Agriculture and Rural Life*. Vol. 1. Lagos.
- Etuk, E. G. and Abalu G. O. (1982) River Basin Development in Nigeria: Case study of Bakolori Project. *Proceedings of Fourth Afro-Asian Regional Conference of International Commission on Irrigation and Drainage* 2:235-46.
- F. O. S. (1983) *Nigerian National Integrated Survey of Households: Rural Agricultural Sample Survey, 1980-81*. Lagos.
- Gunilla, A. and Bjorn, C. (1985). *The wheat trap. Bread and Underdevelopment*

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- Lower Niger River Basin Authority (1985) *Newsletter*, iv (18).
- Lower Niger River Basin Authority (1983) *Performance Reports 1977-1982*.
- Lower Niger River Basin Authority (1992a) *Basic Facts about NRBDA: 15 years of Activities 1976 - 1991*. Amina Communications. Minna.
- Lower Niger River Basin Authority (1992 b) *14th Annual Report, January - Dec. 1991*
- Ojo, M. O. (1991) *Food policy and Economic Development in Nigeria*. Page Publishers. Lagos.
- Omara - Ojungu, H. (1992) *Resource Management in Developing Countries*. Longman. Hong Kong.
- Oyegun, R. (1983) *Water Resources in Kwara State, Nigeria*. Matanmi and Sons, Ilorin.
- Upton, M. (1996) *The Economics of Tropical Farming Systems*. Cambridge University Press. London.
- Wallace, T. (1981) The challenge of food: Nigerian Approach to Agriculture 1975-1980 *Canadian Journal of African Studies*. 15(2).
- Wilde, J. C. and McLoughlin P. M. (1967) *Experiences with Agricultural Development in Tropical Africa*. John Hopkins. Maryland.
- Worlf, P. (1995) The Problems of sustainability in irrigation systems. *Appli Geography* 45/46:55-62.