



RESEARCH ARTICLE

Challenges and Prospects of Lower Anambra River Irrigation Project Omor Anambra State

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ABSTRACT

This study examines water management challenges facing Lower Anambra River Irrigation Project (LARIP) and identifies appropriate strategies for optimum water exploitation for rice cultivation. Structured questionnaires administered randomly to 100 participating farmers show that the challenges facing the project are of two folds: partly technical and partly socio-economics in nature. Lack of basic education, absence of skilled manpower and farmers attitude amongst other factors contribute to poor management of the project.

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INTRODUCTION

The Lowers Anambra River Irrigation Project is located at Omor in Ayamelum Local Government Area of Anambra State. The major occupation of people of this area is agriculture. Rain fed low land rice constitutes the major crop grown in the area that is classified into humid forest vegetation, derived savannah, and montane forest.

Water is critical to life and a prerequisite for sustainable agricultural productivity, development and poverty eradication. Limited supply of water to any agricultural venture will result in poor yield. However, Nwakpu (2000) pointed out that efficient water management is part of efficient soil management and its interaction with the crop determines production. Thus efficient water management aims at maximizing the efficiency per unit of water. Irrigation helps in extending the cropping season, improving intensity of cropping, stabilization of production, and increasing returns to farmers. Kanwar (1978) posited that the scope for increasing agricultural production under irrigated farming condition lies more in increasing yield per unit area per unit time than in bringing more areas under the plough.

Nigeria is endowed with abundant water resources which include about 267 billion cubic meters of underground water, many rivers and streams, lakes, land and rainfall. However, the amount and timing of rain fall are not adequate to meet the water requirement of crops (Onuoha, 2010). The country has over 79 million hectare of arable land of which about 3.14 million hectares have potential to be irrigated (Okigbo, 1986; Eni, 2008)

Buoyed down by the pressure of population explosion and dwindling arable land frontier, the resultant which is

poverty and food insecurity, the federal government embarked on various policies and programmers that would boost agriculture productivity, create employment and raise the standard of living of the populace. One of the programmes to achieve these goals is the establishment of various water management projects which include construction of irrigation systems such as basins, flood, sprinkler, and surface water irrigation projects. Table 1 shows some of these irrigation projects constructed by the federal government of Nigeria. Mahmood (1994) reported that over \$3 billion had been invested on the construction of these irrigation and drainage projects that constitute over 300 dams and reservoirs.

However, the problem facing the country is poor management of these facilities to maximize agricultural production (Nwuba and Kaul, 1985; Esin *et al.*, 1992; Odigboh, 2008). It is regrettable to note that most of these irrigation projects are either malfunctioning or have gone into comatose. This study is undertaken to highlight the salient challenges facing the irrigation projects and suggest strategies for optimal exploitation of the irrigation system for sustainable agricultural production. The overall total planned irrigable area in 2002 and 2004, which included FADAMA areas and state irrigation schemes were put at 605,238 and 624,238 hectares (Othman *et al.*, 2010).

MATERIALS AND METHODS

The Lower Anambra River Irrigation Project is located at Omor in Ayamelum Local Government Area of Anambra State. It has about 3,850 hectares of irrigated

Table 1: Some Irrigation Projects Constructed in Nigeria

Scheme grouping River Basin Dev.	2000 Planned irrigation Area (ha)	2004 Planned irrigation Area (ha)	Area Equipped for Irrigation (ha)		Area Actually Under Irrigation (ha)			
					1990-991	1995-1996	1999-2000	2003-2004
Anambra	11300	11450	3936	3941	38500	402	15	100
Benin-Owena	7455	10380	831	317	51500	2250	5	1000
Chad basim	106630	101900	27500	26180	14000	72	1650	40
Cross River	717	8477	717	364	-	12925	42	21000
HadejaJama Are	83700	40500	21045	18475	125	-	16930	-
Lower Benue	-	-	-	-	100	137	-	70
Nijer Delta	10700	12215	880	1310	400	-	30	-
Lower Nijer	7250	6850	722	187	151	373	53	115
Upper Nijer	9510	16577	1655	1344	140	310	230	722
Ogun/Osun	3485	53895	2928	3697	11000	1320	345	110
Sokoto Rima	33679	28574	6328	512	6150	7230	152	5290
Upper Benue	52812	62390	15445	27580	51265	-	6180	783
	5800	63200	7550	8410	-	-	3860	-
Sub-total	397238	416408	89497	52317	12%	23831	29492	29140
C/o planned	-	100%	21%	22%	53%	6%	7%	7%
C/o developed	-	-	-	100%	-	24%	30%	30%
State scheme	16000	16000	12200	12200	6900	-	6000	6700
Private sector	-	-	-	-	-	-	-	-
Bacita sugar	9000	9000	56000	5600	5000	7000	3000	0
Savanna sugar								
Fadama 4								
Private	55000	55000	55000	55000	18000	36000	55000	5500
	128000	128000	12800	12800	128000	128000	128000	1E+05

Source: ROPISIN, 2006

paddy field and is cropped by about 4,000 farm families whose sole crop is rice. The project employs over 40,000 persons capable of producing over 30,000 tonnes of rice annually.

The project is established with the view to effectively develop and manage water resources in the South East by ensuring that it plans, harnesses and conserves surface and underground water for the benefit of the people in providing the sustainable water needs in the zone. It has about 40 kilometers of headrace, 570.4 kilometers of secondary, tertiary and distribution canals. 307 kilometers of secondary and farm roads are built, building were established with improved estate water supply. The project is equipped with 7 megawatts (MW) transformer sub-station, 3 numbers electric motor driven pumps and various types of agricultural machines and implements are provided for the project.

Methodology

The study adopted survey trips to the project area during which structured questionnaire was randomly administered on 100 participating famers for primary data collection. Information from the River Basin Project records offered secondary data. Personal observation was also made. These data were collated and scientifically analyzed to arrive at the conclusion and recommendations given at the end of this study.

RESULTS AND DISCUSSION

Water for the irrigation project is pumped from Anambra River using electric motor driven pumps into the headrace. The water flows gravitationally through the secondary into the tertiary and distribution canals and finally into the paddy plots. Excess water leave the paddy plots via the drainages provided at the rear end of the

paddy plots. The study shows that the volume of the irrigation water is not sufficient to serve all the zones of the project at the same time. This gave rise to rotational sharing of water among the farmers. However, high frequency of pump breakdown and lack of diesel to run the generating sets lead to insufficient water supply to farmers. This results in scramble for water by farmers, who employ all types of dubious means to steal water. Moreover, inadequate supply of water has reduced the two seasonal cropping to one thereby reducing the total annual production by 50 percent or more.

The study also reveals that about 62 percent of the farmers are illiterate who did not acquire any form of basic education, while the remaining 38 percent are literate. This shows that majority of the farmers lack ability to read and understand basic instructions about the use and management of irrigation facilities or application of modern techniques for farming.

About 18 percent of the farmers are within the age bracket of 18-30 years of age, 72 percent within the age of 31-50 years and 10 percent are at the age of 51 years and above.

Result shows that about 47 percent of the farmers engage in rice cropping as their primary occupation while the remaining 53 percent engage in farming as a hobby or part-time business. Most of them are civil servants (serving or retired), while others are engaged in other form of occupation.

The study also reveals that the authority of the project lack adequate fund to run the maintenance of the facilities and worthy of mention is the apparent lack of technical skills needed to repair, maintain and manage the irrigation scheme.

There is apparent lack of co-ordination between the authorities of the project and participating farmers, hence, there is lack of sequence or order of running the scheme. No union or group exists between the farmers to give

Table 2: Recommendations for Efficient Management of the Scheme

S/N	Actions	Response
1	Formation of Water Consumer Association	Decentralization of roles and responsibilities, sharing arrangements, establishing shareholder cooperation and partnership to work together with the River Basin authority is critical to enhance sustainability of the project. The association should be as a partner and management arm at farmers level charged specific responsibilities:
2	Organization of regular workshops and seminars	These are necessary avenues of educating the farmers on operation and maintenance of the irrigation water facilities. The workshop should discuss and agree on strategies to ensure operation and maintenance of the facilities. Defaulters should be penalized as must have been agreed.
3	Regular clean-up of the water-course	Enhance smooth flow of irrigation water and minimize water losses through seepage, spilling, and percolation
4	Involvement of beneficiaries in the project and payment of counterpart fund	Beneficiaries to be involved in all the stages of the project in order to have the full impact of the project. Counterpart payment gives them sense of ownership
5	Improved or efficient extension services	Improved extension services will enhance better exploitation of irrigation water and adoption of modern techniques in farming
6	Training and re-training of staff	Enhancing skill acquisition for efficient management of the project.
7	Regular supervision by the Federal Government and supervisory ministry	This will minimize project failures as problems will be early nipped from the bud
8	Establishment of tractor hiring services	This will increase farmers farm holding which will lead to increased production of agricultural products.

them voice in the affair that concern their welfare and business.

There is an alarming rate of underutilization of the irrigated fields due to poor water supply setting up infrastructural deterioration.

Recommendations

1. Recommendations for efficient management of the irrigation project to achieve the objective of the project are given in Table 2.
2. Extension services to farmers should be improved to enhance their adoption of modern innovations in farming. This will enable them effectively manage the facilities available to them for agricultural operations.
3. Beneficiaries of any projects should be involved both in the planning, designing, execution and exploitation stages to enable them understand the mechanism and the full impact of the project. They should make some counterpart payment which will enable them see the project as theirs and have a stake protect.

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