

Sokoto Rima River Basin Development Authority (SRRBDA) and Rural Development in Sokoto State, Nigeria

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Abstract. In spite of the efforts by successive administrations in Nigeria to address the issue of rural development, the rural areas remain backward in terms of development. This study, therefore, attempted to examine the effect of the SRRBDA on rural development in Sokoto State. The data for the study was collected by the use of questionnaire, interview, observations, as well as official records of SRRBDA, textbooks and other published and unpublished materials. The copies of the questionnaire were distributed in eight local government areas involving fifteen villages using purposive sampling and the data collected were analysed using chi-square statistical techniques in order to test the hypothesis. The revealed that the SRRBDA has not significantly enhanced rural development in the host communities through the provision of irrigation facilities and flood control. On the basis of the findings, it was recommended amongst others, that the SRRBDA should be redesigned for effective flood control and resettlement of displaced farmers.

Keywords. Rural development, River basin, Irrigation, Flooding, Poverty, Rural area.

JEL. A10, E20, H50, N40, O12.

1. Introduction

The rural areas in Nigeria are usually inhabited by the bulk of the country's population. They serve as the base for food production and raw materials as well as a source of capital formation for the country and a principal market for domestic manufactures. In spite of the importance of the rural areas they are not attractive to live in and are home to the incidence of extreme poverty in Nigeria. The World Bank's study (2006) reports that:

Poverty in Nigeria is widespread and severe. Poverty is highest in rural areas. The number of rural poor is roughly twice that of urban poor. The depth of poverty was more than double in rural areas, of the extreme poor 85% live in rural areas and more than two third live on farms. Income inequality is also worse in rural areas (World Bank Report, 2006)

In the same vein the National Bureau of statistics states that the incidence of poverty in the rural areas in 2005 was 63.3% compared to 43.2% in the urban areas. This fact is logical, given that most of the indicators of poverty are more glaring in the rural areas. Usually there is absence of water, electricity, good roads, health facilities and qualitative education.

Attempts at solving the rural problems have led to the introduction of various programmes to develop agriculture which is the main stay of rural economy as well

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as to raise the living standard of the rural populace. The strategies introduced included the establishment of such institutional infrastructures for rural development like the Agricultural Credit Guarantee scheme to complement the activities of the Nigerian Agricultural and Co-operative Bank (NACB) (now Bank of Agriculture), the Operation Feed the Nation (OFN), Green Revolution, River Basin Development Authorities (RBDAs), provision of improved input to farmers through the National Accelerated Food Production Programme (NAFPP) the Fertilizer Procurement and Distribution Programme (FPDP), the establishment of the Directorate of Food, Roads and Rural Infrastructures (DFRRI), The National Directorate of Employment (NDE), Integrated Agricultural Development Projects (IADP), Peoples Bank of Nigeria (PBN), Community Bank (CB), Family Economic Advancement Programme (FEAP) and National Poverty Eradication Programme (NAPEP).

Nigeria is predominantly an agrarian nation endowed with an estimated total land area of 98.3 million hectares, out of which 71.2 million hectares are arable, and an estimated human population of about 160 million (National Population Commission 2011). Agriculture remains the largest employer of labour in Nigeria as it employs 65% of the total labour force, and also a major contributor to gross domestic product (GDP).

Maximizing agricultural production from available agricultural land has attracted the attention of agricultural scholars and concerned citizens ever since Nigeria became a food deficit country in the 1970s (Kwangai, 1986). They stressed that during the 1970s and early 1980s, declining domestic food production was supplemented with food imports financed by huge earnings from oil. The food import bill, according to Central Bank of Nigeria (CBN) (2006), rose from \$ 1.46 Billion to \$226 Billion between 1992 and 2003.

Nigeria remains a food deficit and food insecure country since there still exist households that persistently lack the ability to either buy food or to produce their own. Abbas (1989) emphasized that satisfactory production levels and stability of supplies should be matched by a reduction in poverty and increase in the effective demand to ensure economic and physical access for the poor. This enabling route may consist of income generation opportunities like providing more irrigation resources and opening up more agricultural land for farming.

Sokoto State is endowed with land and other resources that should support the development of all facets of agriculture ranging from crops, livestock and fisheries among others. Over 70% of the state population is engaged in one form of agricultural production or another during the rainy season. But yields of rainfall are generally low due to the arid nature of the state which can only support early maturing crop varieties. However, dry season crops yields are higher because of irrigation facilities that match the soil and climatic conditions of the state. Currently agricultural sector employs over 90% of the workforce in the state and has the potential of providing income and jobs to many rural dwellers as well as provision of food. However, only 52.1% of the arable land is under cultivation leaving 47.9% of the land uncultivated. Accordingly, only 14.4% of irrigable land is currently irrigated leaving 85.6% of irrigable land un-utilized (Sokoto State Government report 2007).

The SRRBDA and 10 others were established by the Federal Military Government under Decree No 25 of 1976, with the express purpose of achieving comprehensive and integrated rural development such as the provision of irrigation facilities, flood control domestic/industrial water supply and hydroelectricity.

However in spite of the huge investments in SRRBDA it has not been able to raise substantially food production as evidenced by food insecurity and pervasive

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poverty in the host communities. Sokoto state ranked highest in 2011 in the national aggregate of poverty with 86.4% of the 3 million people residing in the state living below poverty line of less than one US dollar a day (NBS 2012).

One other objective of SRRBDA is flood prevention and control, which the authority is unable to carry out adequately resulting into a series of flooding and displacement of farmers from their farmlands, for example, Sokoto flood of 2010 in which 95 villages and 192, 791 persons were displaced. (Sokoto State Government Report, 2010). What are the factors responsible for this state of affairs? The objective of this study, therefore, is to assess how SRRBDA has affected Rural Development in Sokoto State via provision of irrigation facilities and flood control. It was consequently hypothesized that SRRBDA has not significantly affected rural development vis-à-vis provision of irrigation facilities and flood control in the host communities.

2. Literature Review

Various studies conducted on the activities of RBDAs and other sister agricultural Development Projects have criticized RBDAs for failing to substantially transform rural areas and increase food production in Nigeria.

Olatunbosun (1975) quoted by Odo (2010) in his book "Nigeria's neglected rural majority", traces rural backwardness to colonial policies saying there is little difference between rural oriented economic policies before and after independence in Nigeria. Their gap is ever widening he maintained that "despite the potential strength achieved through political independence the strategy of development policies pursued by the Nigerians who took control of the government from the colonial administrators continued to resemble in many ways those of the colonialist. Consequently, the living condition of the rural people has virtually remained unaffected by the development efforts.

Mohammed & Shehu (1986) quoted by Odo (2010) in their article "Rural Development-a fact or a dream deferred" praises various rural development programmes introduced in Nigeria but faulted the process adapted in the planning and execution of the projects saying that most of these projects are political exercise meant to reward government protégés and as a result of which they are poorly planned and executed.

To Ogueri (2006), most of the projects do not take the interest and opinion of farmers into considerations farmers are not consulted on matters that concern their productive capacities. In his research on the place and impact of River Basin Development Authorities on Nigeria's development. Mado (1986) concluded that the RBDAs are so bedevilled by Resettlement problems, over mechanization, high operational cost, and excessive dependence on imported machinery most of which lack spare parts that they can hardly be effective food basket of the nation.

Yahaya (2002) posits that the RBDAs have brought about certain positive development in the lives of the target population by way of agricultural and infrastructural development but that the design of the irrigation projects certainly shows that the planners, contractors and government officials by passed the beneficiary of the project, which resulted in the catalogue of devastating outcomes. The projects should not only be aimed at economic gains but also at social benefits. Thus development paradigms should be designed along socio-economic, political and cultural perspective to development.

Akindele (1996), in his study of Owenna River Basin Development authority concluded that the RBDA have failed to actually attain the desired objectives. This is attributed to the factors of political environment and actions of political actors

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which have been incompatible with the management and organizational goals of the authorities since their establishments.

Rural Nigeria is lacking in basic amenities like safe drinking water, good access roads, health delivery services, electricity, schools, etc. Their very means of survival, which is agriculture is in critical condition. Majority of the rural inhabitants in Nigeria are farmers, some of whom combined farming with rearing and hunting. The neglect of agriculture by the government in the wake of oil boom had exposed many rural families to the danger of losing their means of livelihood. However, people have to survive and when there is no tangible means of survival, they often resort to migration.

The consequences of rural-urban drift are seen in the high rate of criminal activities in our major cities, population explosion, and emergence of ghettos, to mention but a few. The negative impact of this development on the urban life is appreciated against the back drop of the poor state of the physical development in our cities and towns, which lacked basic amenities to support their people. The influx of rural migrants often leads to over stretching of the existing urban infrastructures.

Akindele (1996) observes that the River Basin Development Authorities (RBDAs) were conceived in Nigeria as a development strategy anticipated resulting in the development of irrigation schemes, which would benefit rural farmers directly and improve supply of portable water to the rural areas in general. In its original conception, the functions of the River Basin Development Authorities (RBDAs) encompassed comprehensive development of surface and subterranean water, construction of dams, development of irrigation for direct crops production, building of dams, reservoirs and boreholes, development of fisheries, possessing of crops and livestock as well as re-settlement of persons displaced due to project locations.

The River Basin Development scheme was therefore an agricultural and rural development project. It was conceived as a problem-solving approach to the incidence of food crises, rural poverty, deprivation and alienation; hence it was expected to improve the condition of the rural populace. The objective were firstly, to increase rural productivity and income and secondly, to diversify the rural economy and improve the quality of life of the rural population. This approach recognizes the inter-relationship between agriculture and the rural economy as well as the national economy. In the context of the RBDA strategy, rural development is seen as the comprehensive development of the rural areas.

Yahaya (2002) states that whereas before the 1970s, formal government intervention in irrigation activities in Nigeria was limited to small schemes mostly along the River Niger, a number of ambitious and large-scale scheme were embarked upon following the establishment of the RBDAs in 1976. These included the Bakolori and Goronyo irrigation dams on the SRRBDA, the Kano River Project, and the Chad irrigation project amongst others. These projects together accounted for over 146,000 hectares of irrigable land. By 1984, well over 90,000 farmers have been assisted by the RBDAs to crop a total of 188,194 hectares. This produced a total of 524,859 tones of maize, rice, wheat, millet, cowpea, sorghum and vegetables valued at over N213,559,740.00. Farmers were usually assisted in the areas of tractorization, provision of inputs such as improved seeds, herbicides, fertilizer and water for irrigation.

Other highlights of the achievements of the RBDAs according to Olumese (1988) werethe design and construction of many small and medium earth dams for rural water supply, irrigation, fishery and livestock as well as the establishment of well over 1,200 boreholes in rural areas across the country for the usually disadvantaged communities. The borehole programme has helped in the provision

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of water for livestock, particularly in the arid north. The construction of over 4,000km of new feeder roads up to 1985, while quite a large number of others were maintained in various local government areas nation-wide.

Out of the 250,000 hectares projected to come under irrigated agriculture during the Fourth National Development Plan, only 83,305 hectares were developed by the RBDAs. From this figure, 75,750 hectares representing 92% were attributed to the Chad Basin Development Authority, Hadejia- Jama'a River Development Authority and SRRBDA, which were the first to be established in the country.

The RBDAs have devoted the greater proportion of their investment capital to the development of infrastructures including designs, studies and construction of irrigation dams, reservoirs and canals as well as office accommodation and staff quarters. However, compared to the potentials, which various feasibility studies have shown to exist in the country, very little of the peasant land under cultivation could be directly attributed to irrigation infrastructures provided by the RBDAs. Lack of qualified technical manpower, inadequate funding and organizational constraints have frustrated the realization of the full potentials of the RBDAs and by extension their set objectives.

Adeniyi & Titiola (1987) quoted by Odo (2010) describe the RBDAs as one of the most important programmes in Nigeria during the 1980s with agriculture and rural development focus. However, in their opinion, despite the huge amount of national resources devoted to the achievement of the RBDAs programmes, they have not satisfactorily performed the traditional roles expected of them. In the light of the above, most of these scholars advocated that small farmers should be made the centre-piece of Nigeria food production efforts while RBDAs should supplement their efforts. RBDAs should relate with the peasant and should encourage the use indigenous tools while they work with technologists to replace older tools with better powered and more efficient, low cost tools. This study is primarily concerned with examining the effect of the SRRBDA on the provision of irrigation facilities and flood control in Sokoto state. David Easton's systems theory was adopted to examine the effect of the SRRBDA on rural development in the host communities. The systems Theory arose out of the need to provide explanations on aspects of workings of organization not covered by traditional classical and other theories of administration. The system as a concept is derived from the biological sciences meaning a whole with interrelated parts. Ogunbaremu (2004) views the system approach as exhibiting features of holism or synergy, hierarchy of parts which work harmoniously for the attainment of goals of the higher system and are equally affected by the alteration in one of the parts.

The model uses as its major unit of analysis the political system in which political life is viewed as a system of behaviour. Political systems are defined by Easton as a set of interactions, abstracted from the totality of social behaviour, through which values are authoritatively allocated for a society (Conway & Feigert, 1976). In this definition, there are a number of assumptions that lend direction to systems analysis. For one, the emphasis is on interaction as a variable.

Interaction may take place between individual actors, institutions or actors and institutions collectively interacting with others. Easton recognized that there was no single way of conceptualizing human behaviour, which could properly encompass the variety and behaviour therefore, must be quite general and broad in nature. A system is presumed to be analytically distinct from its environment. Although an analytical distinction is made between the system and its environment, the system is open in varying degrees to influences from the environment. Indeed, the nature of environmental influences and the ways in which the system responds to them is one of Easton's major concerns. In separating a system from its environment, however, we refer symbolically to the system boundary. The nature

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of systematic boundaries, how they are defined and their degree of flexibility or rigidity are major problems facing systems theorists.

If we assume that systems are susceptible to varying degrees of influence from the environment, and that systems may affect their surroundings, we must make reference to the inputs, outputs and feedback variables. A political system does not exist in isolation. Surrounded as it were by physical, cultural, and economic environments, and by other systems, it must interact with these potential sources of influence. Inputs from the environment and from the system are demand or support inputs. Without inputs, the system can neither work nor sustain itself. An analogy may be made to the human biological system. It is difficult for a person to survive for long without such basic physical supports of food, clothing and shelter, which may be needed in varying degrees as determined by the physical environment and sometimes by the cultural one. Intangible supports may be needed such as affection, respect and acceptance by others.

Demands are also necessary as they lend purpose and direction to the system. They are generally concerned with the allocation of resources, materials or positions. Demands are made by individuals and groups within or without the system who are likely to have different views on how resources should be allocated. However, there is never any assurance that demands would be met on one for one ratio to outputs or allocation of resources. In other words, it is less likely that demand input x will result in output x . In Estonian model, system maintenance or survival is a primary goal, one that supersedes all others. The question of system equilibrium and survival are implicit in all systems theory. Also crucial to the consideration of input/output analysis is the learning and correction capacity of a system, which is referred to as feedback. System outputs or decisions do not automatically solve problems. Indeed, they may create problems that were not noticed during an initial decision-making. The impact analysis may provide information that the performance of SRRBDA has impacted positively on the standard of living of its target population and this would serve as support for the authority and its programme or on the other hand feedback analysis may reveal constraints or failures to meet authority's objectives which would then call for corrective measures through suggestions and recommendations at the end of the work for enhanced performance by the authority.

3. Research Method

The primary data for the study were obtained through the use of questionnaire and oral interview as well as personal observation. The interview technique enabled the researchers to generate extensive information that were not easily derived by using the questionnaire technique and also allows for the expression of opinions freely. Two methods of questioning were used in the interview schedules as follows:

- a) Closed ended questions – questions with alternative responses (Yes/No)
- b) Open ended questions – questions where respondents are allowed to express their views freely on the subject matter.

The primary data helped to cross-check the information generated from the secondary sources through official publications and records.

The secondary data for the study included official records of the activities of SRRBDA and other rural and agricultural outfits engaged in the research and development of rural areas. The materials were obtained from agricultural research institutes, university libraries, national and states libraries, ADPs and Fadama offices, SRRBDA Headquarters and states and area offices.

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Physical inspection of SRRBDA projects sites was undertaken. Here the researchers visited Goronyo, Bakolori and Shagari dams and inspected dams reservoir sites where most of the irrigation activities were carried out. Similarly, visits were undertaken to 2010 flood sites where thousands of houses and farmlands were destroyed by floods from Goronyo Dam. Explanations and clarifications were sought from SRRBDA officials at the sites and headquarters.

Eight local government areas were selected for this study using purposive sampling technique. According to statistics from National Population Commission, the population of the 8 Local Governments covered by SRRBDA is about 1,000,000 people, while the population within the irrigation areas is about 400,000 people (SRRBDA 2012). Purposively, 15 villages of estimated 50,000 inhabitants were selected with 350 copies of questionnaire allocated to them. The SRRBDA has a total personnel of 760 and 50 copies of questionnaire were assigned to each of the five departments of the authority, bringing the total copies of the questionnaire to 400. Two sets of questionnaires were designed and administered to the two sets of respondents namely: The officials of SRRBDA and the SRRBDA project communities who were the target group and beneficiaries of the Authority's activities. The first set of questionnaire was prepared to obtain information from project staff and officials. The second set of questionnaire was designed to elicit information from the project beneficiaries.

Tables were used in the analysis of the data while chi-square was employed in testing the hypothesis.

Table 1. *Distribution of Questionnaires to 15 Villages and SRRBDA Officials*

S/No	Name of village	L/govt area	No of questionnaire
1	Kagara	Goronyo	30
2	Taloka	Goronyo	20
3	Kwankwaso	Goronyo	20
4	Giyawa	Wurno	20
5	Lugu	Wurno	20
6	Tsamaye	SabonBirmi	20
7.	Kwalkwalawa	Wammakko	20
8.	Wamakko	Wamakko	20
9.	GidanMaigana	Kware	20
10	Dunguji	Kware	20
11.	RuggaLiman	Kware	20
12.	Gidanhakimi	Gada	30
13.	Kiri	Gada	20
14.	Mai kujera	Rabah	20
15.	Lambara	Shagari	30
16.	Ministry of Agric	Sokoto	10
17.	Ministry of Water Resources	Sokoto	10
18.	Sokoto Rima River Basin Development Authority		30
Total			400

Source: Survey Research, 2012

Table2. *Classification of Respondents according to their Opinion on Performance of SRRBDA in respect of Provision of Irrigation Facilities and Flood Control.*

S/NO	STATEMENT	RESPONDENTS				
		Strongly Agree	Agree	Disagree	Strongly Disagree	Total
1.	The establishment of SRRBDA has enhanced food production.	12% (48)	18% (72)	44% (176)	26% (104)	100%
2.	The SRRDBA has improved water supply through irrigation.	9% (36)	32% (128)	36% (144)	23% (92)	100%
3.	The establishment of SRRBDA has helped to control flood in host communities.	11% (44)	1% (4)	88% (352)	- (0)	100%

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Source: Survey Data obtained in the field 2012

The hypothesis that SRRBDA has not significantly affected rural development vis-à-vis provision of irrigation facilities and flood control in the host communities is hereby tested.

Table 2. Cumulative Percentage Analysis

Variable	Responses				Total
	Strongly Agree	Agree	Disagree	Strongly Disagree	
The establishment of SRRBDA has enhanced food production.	48	72	176	104	400
The SRRDBA has improved water supply through irrigation.	36	128	144	92	400
The establishment of SRRBDA has helped to control flood in host communities.	44	4	352	0	400
Total	128	204	672	196	1200

Source: Field Survey 2012

$$\text{Expected Frequencies} = \frac{GT \times CT}{\text{Total}}$$

$$= \frac{128 * 400}{1200} = 42,67, \quad \frac{204 * 400}{1200} = 68, \quad \frac{672 * 400}{1200} = 224, \quad \frac{196 * 400}{1200} = 65,3$$

Table 3 Calculation of Chi-Square

	Observed (O)	Expected (E)	O-E	$\frac{(O-E)^2}{E}$
1	128	42.67	85.33	170.64
2	204	68	136	272
3	672	224	448	896
4	196	65.3	130.7	261.6
Total	1200	399.97		$\sum = 1.59$

Degree of freedom (df)

$$= (C-1) (r-1)$$

$$= (4-1) (3-1)$$

$$= 3 \times 2 = 6$$

Level of Significance = 0.05 (5%)

The calculated value is

$$X^2 = \sum \frac{(O-E)^2}{E} = 1.59 \text{ (Calculated Value)}$$

The tabulated value is obtained from tables using the degree of freedom and the level of significance. Tabular value is 2.45. If the chi-square calculated value is less than chi-square tabulated value, the null hypothesis is accepted and the alternate is rejected. Since 1.59 is less than 2.45, the null hypothesis is accepted. We therefore, accept the null hypothesis that SRRBDA has not significantly affected rural development vis-à-vis provision of irrigation facilities and flood control in the host communities.

The RBDAs' programmes were anchored on the development of agriculture and socio-economic infrastructure in the rural areas as a means to enhance the quality of rural life and alleviate poverty. This was informed by the dearth of infrastructure for economic development as well as basic amenities in the rural areas making the rural dwellers impoverished and underdeveloped.

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In assessing the performances of SRRBDA one of the basic indicators is the degree to which the authority has provided rural basic infrastructure to transform their respective rural areas. Our respondents were asked to state if they had experienced any improvement in their production status and their standard of living as a result of SRRBDA activities and their responses were that they were rather improvised.

The findings of this study are in agreement with the findings of the research conducted by Odo (2010) on SRRBDA and Lower Benue River Basin Development Authority which indicated that none of the respondents had an annual income of N100,000(local currency) and only a few indicated that they had bicycles.

In 2010 when the Goronyo Dam over-flooded 95 villages and 20,840 household comprising 192, 791 people were displaced and forced to take shelter elsewhere. This flood could not be controlled easily until external agencies came to the rescue. It was also reported that irrigation facilities were almost lacking in places where they were needed. Only rich farmers could have access to these facilities because the services had to be paid for (Interview Report, 2012).

Most of the SRRBDA projects were without social and environmental impact on the host communities. This failure was evidenced by the peaceful demonstrations embarked upon by farmers in Bakolori and the various petitions and representations by farmers under Goronyo and Shagari dams. Eventually, the farmers changed their tactics from peaceful demonstrations to violent rebellion directed at stopping the construction of access roads and irrigation facilities. This repeated violent demonstration culminated in the killing of at least 386 protesters by the police in 1980 (Odo, 2010). Yahaya (2002) also provides an insight into the catalogue of consequences that followed the Bakolori irrigation projects. Farmers were dispossessed of their productive farmlands, there were cases of fraudulent reallocation processes, inadequate compensation and resettlement of displaced farmers. Yahaya went further to lament whether Bakolori irrigation project was a development effort or a catastrophe.

Personal interview with some officials of SRRBDA revealed that Goronyo dam submerged 43 villages and 13,000 farmers were dispossessed of their farmlands because environmental management was not given proper attention in the planning and execution of the project. The farmers were left as landless peasants (Interview Report, 2012).personal observations collaborated these reports.

4. Findings and Recommendations

The following are some of the major findings of the study: 1- The study revealed that the irrigation facilities provided by SRRBDA did not significantly affect the lives of the rural farmers in host communities. 2- The study also showed that many of the farmers especially at the Goronyo, Bakolori and Shagari dams were rendered landless because of the ineffective flood control. 3- The dispossessed farmers were neither resettled nor paid adequate compensation.

The challenge posed by the need for large scale irrigation projects calls for a new approach which would ensure even access to the facilities by all segments of the society. This would ensure that SRRBDA project would impact positively on rural areas. After all, the whole essence of rural development is to improve the quality of human life. Therefore, there should be social impact assessment of every project designed for construction by SRRBDA to ensure that the issue of resettlement and compensation are well taken care of in order to avoid the situation encountered at Bakolori, Goronyo and Shagari dams where thousands of displaced farmers were left homeless and where forced to abandon farming.

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