JOURNAL OF LIAONING TECHNICAL UNIVERSITY (NATURAL SCIENCE EDITION)
ISSN: 1008-0562

RIVER BASIN AND FADAMA CULTIVATION ALONG IKERE-EKITI SECTION OF RIVER OSUN IN EKITI STATE, NIGERIA

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Abstract

Fadama farming along river Osun valley in Ikere-Ekiti is not relatively new, but has generated some environmental and socioeconomic consequences which now called for serious attention in the last few years.in spite of the channelization intervention scheme on a section of the river's valley by the government. It was on this premium that has motivated the interest of this paper to investigate farming activities along the Ikere-Ekiti section of the river, examine the effectiveness of the Benni-Owena River Basin Development Authority (BORBDA) and to advance probable solutions to the attendant challenges especially on the fadama cultivation. Personal field inspection to the area was carried out, while observation, interview combined with administration of questionnaire were utilised to solicit relevant information. Simple descriptive statistical techniques were employed to analyse the data generated. Results reveal that less than 40 % of the farmers are of Ikere-Ekiti origin, operating on family lands; while more than 50% are tenant farmers mostly the Hausas and others from the northern part of the country. The river valley has two farming tracts – the fadama area where cropping is carried out during dry season (November- April) and the drier upland section of the valley which dried up fast immediately after the floods, owing to the elevation. Maize, okro, tomatoes, water melons and green leafy vegetables are the major crops grown on the fadama areas. It is a major source of income to the farmers and a great source of food supply to the inhabitants of the city as well as neighbouring settlements. However, the farming system is faced with the following challenges; destruction of crops by floods from early rains and domestic animals; lack of storage facilities for perishable crops; bad seedlings etc. Consequently, this paper advocates that the River Basin Authority should come to the aid of the farmers in the areas of flood control and construction of access road to remote parts of the valley, provision of fertilizer and material for better seedling, construction of dam for irrigation where possible, etc.

Keywords: River Basin, Fadama Cultivation, River Osun, Ikere-Ekiti.

Introduction

Since independence, many government policies in Nigeria have been directed towards accelerating the production of food and raw materials for her agro-allied industries with the ultimate aim of transforming the economy into an industrialised one as well as raising the living standards of the population especially in the rural areas. Therefore, agriculture has been one of the sectors expected to act as catalyst towards the realisation of accelerated economic growth and development in the country. The traditional role of agriculture in economic development provides the foundation for this position. According to Johnston and Mellor (1961), the role includes production contribution, market contribution, factor contribution and foreign exchange contribution. Agriculture's contribution to the Gross Domestic Product (GDP) has remained stable at between 30 and 42 percent, and employs about 65 percent of the labour force in Nigeria (Aigbokhan, 2001). Therefore, it is believed to enhance and sustain the nation's foreign exchange is very high.

However, it is noted with dismay that the proliferation of "repetitive and arguably counter-productive" agricultural and rural development projects and the "uncontrollable urge to publicise as widely as possible, such government efforts to transform agriculture and rural societies using bold and conspicuously positioned signboards and slick slogans" propaganda have not achieved any tangible success (Adetunberu and Mikanjuola, 1987). Each new government (Civilian and Military) introduces its own new scheme and slogans on assuming power to distinguish itself from earlier efforts by its predecessors and to show the degree of her seriousness and commitment to agriculture and rural development. Such new schemes are successors to earlier ones that have failed or "prematurely aborted projects" (Floyd,1982).

The creation of eleven River Basin Development Authorities (RBDAs) in 1976 which cover the whole country is the boldest and most comprehensive of all the schemes designed to boast food production and develop rural areas. No doubt, river basins have been used in a variety of ways by many societies to achieve socio-economic development and civilisation from time to immemorial. Aside the widespread crude irrigation water supply schemes of pre-modern societies, comprehensive multipurpose and modern schemes have been and are still being designed by many countries for utility maximization of river basins (Adetunberu and Mikanjuola, 1987).

The concept of river basin as a development unit was conceived as a result of studies financed by the Federal ministry of water resources. This came up as early as the 1970 fiscal year, but was not tried until 1973 when the Sokoto-Rima and Chad Basin Development Authorities were established by the Federal government and became operational in 1974. The impact of these

two authorities was partly responsible for the establishment of the remaining nine to cover the entire country (Anyanwu, et.al., 1997).

Apart from dam construction and the provision of electricity and water for industrial and domestic uses, the RBDAs are expected to boost the production and processing of food and raw materials working in partnership with state and local government agencies as well as any other persons. They are also expected to assist in the training of staff for the running and maintenance of rural development schemes and for general extension work at the village level. With over a decade of their establishment, the RBDAs in Nigeria on the average are yet to make their impact sufficiently felt when the amount so far invested is taken into consideration. While some of these authorities have already produced concrete results in terms of completed projects and actual food and raw material production, others are yet to show anything tangible for the huge investment on them in their areas of operation, except their urban located office complexes and ubiquitous weather-beaten and rotting signboards all over the country side. Worst still, peasant farmers in the area in such exercises as land clearing, and provision of modern infrastructure such as dams, irrigation channels and equipment and access roads especially along small valleys that could be profitably used for food production round the year. Absence of such assistance from the RBDAS is partly responsible for the limited use of small river valleys that abound in the study area.

Fadama (dry season) cultivation along river Osun valley is not relatively new in the area and it is being faced with some challenges which have reached epidemic proportions in the last few years. Apart from a few kilometres concrete channelization recently conducted and financed by the World Bank, no other measures have been put in place to address the challenges. It is on this, therefore, that has motivated this study to investigate the influence of RBDAs on farming activities along the Ikere-Ekiti section of the river Osun valley with the aim of improving on the operational strategies for maximum utilization of the river valley's agricultural productivity. On this note, the study has set to: identify the practicing farmers on the river's flood plain, types of crops grown, challenges facing the farmers, the involvement of Benin-Owena River Basin Development Authority, and to advance probable solutions to the identified challenges.

The study area

Ikere-Ekiti the study area is a municipal local government area located approximately between Latitudes 7^0 28' N and 7^0 32'N and between Longitudes 5^0 12'E and 5^0 16'E of the green wish meridian. The altitude ranges from 1.400metres to 2.500metres above sea level. The peaks are

at Orole hills, a notable inselberg situated at the southern fringe of the area and Olosunta hills, a dissected ridge located along western axis of the town (Aladelokun, 2004).

The town though a linear outlay in shape due to the various outcrop of rocks impeding the expansion in many areas is a nodal settlement. It is bothered in the south by Akure North Local Government Area of Ondo State; in the north by Ado Local Government Area of Ekiti State; in the west by Ekiti South/West Local Government Area of Ekiti State; and in the east by Ise/Orun Local Government Area of Ekiti State (Aladelokun, 2004).

The area enjoys a typical tropical hot and wet type of climate dominated by seasonal migration and pulsation of two air masses viz: The Cold Tropical Continental (CT) air masses from the Sahara, associated with dry season, and the Warm Humid Tropical Maritime (MT) air masses from the Gulf of Guinea, influencing the area during wet season. These two air masses have produced wet and dry seasons in the area (Aladelokun, 2004).

The wet season starts from March and ends around mid-November with a short brake in July/August, while the dry season normally lasted from November till early March. However, recent climate change seems to have altered this regime (Aladelokun, 1998 and Adetunberu, 2020). The temperature usually is higher just before the rains with the average of between 26^{0C} 28^{0C} for each of the months and drops to about 22^{0C} during the cold season. The range of the temperature is between 4^{0C} and 6^{0C}.

River Osun a tributary to river Ogbese enters Ikere-Ekiti from the north-west and flows southwards and then turns north-east across the southern half of the town. The river has a length of about 7km around this area with a flood plain approximately 2sq. km which is normally engaged by fadama farmers. The location of the built-up area around the floodplain is quite symbolic for peak flow in prolonged rainfall situation. The river networks and channel slope reveals that the tributaries are comparatively short in length, occupy shallow valleys, Therefore, the coalescence flood flows from a number of major tributaries and runoff along the drainage basin usually resulted to sharp high magnitude flood peak at the basin floodplain (Aladelokun, 2004).

Usually, river Osun is in spate twice a year which is in consonance with double maxima characteristic regime of rainfall in the area. In other words, the area experience double maxima of rainfall in a year. The first usually in July and the second in September. During the periods, the entire extensive low lying valley floor is inundated and remains marshy until early October (Aladelokun, 1998). It is on the floodplain that fadama farming is practiced during the dry season when the flood water must have dried up. This usually come up between October and March or April in years when there is delay in the onset of the rains.

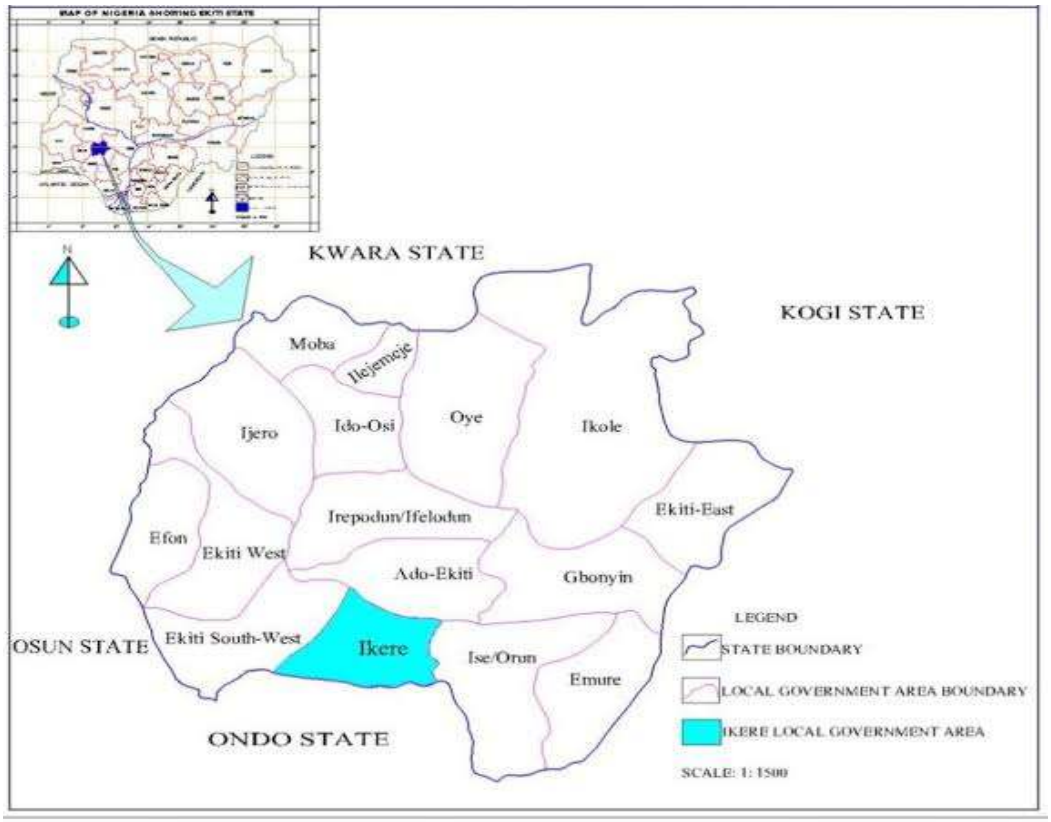

Figure 1. Map of Ekiti State showing the study area.

Methodology

Both primary and secondary data were sourced for this work. The primary data were collected from the members of the public associated with the area, usually the farmers, the people living close to the flood plain, and market women who engaged in buying and selling of the farm products using oral interview as well as questionnaire. In all, a total of …. farmers, dwellers and market women were involved. Simple descriptive statistical techniques were used to analyse the data generated.

Results and discussion

Table 1. Age distribution of despondent farmers

S/N	Age Group	Frequency	Percentage
i.	0 - 17	00	-
ii.	18 - 25	04	6.4
iii.	26 - 35	12	19.0
iv.	36 - 45	29	46.0
v.	46 - 55	15	23.8
vi.	56 - 65	03	4.8
vii	66 - 75	00	-
viii	75 and above	00	-
	Total	**63**	**100**

Source: Field survey 2023

Generally, less than 30 percent of those who are involved in the fadama farming in the area falls between the ages of 18 and 35, adults of working ages between 36 and 45 formed the majority of the working group. However, within the working age, the majority of them falls between the ages of 36 and 45 with 46percent. This suggests that the majority of the youth which are the working class in the area do not show any interest in agriculture – fadama cropping. This has actually demonstrated social redundancy in the youth as it applies to the work situation which is idleness. Such idleness according to Sandra (1978) is one of the major obstacles to development efforts in Nigeria that deserves a special attention by researchers and policy-makers. Also, the idleness could be one of the reasons why most of the youth in the area are found engaged in internet fraud otherwise known as yahoo plus, although some of them are engaged in Okada rider.

Table 2. Educational status of the respondent farmers

S/N	Education Level	Frequency	Percentage
i.	No formal education	02	3.2
ii	Primary education	15	23.8
iii	Post-primary education	41	65.1
iv	Post-secondary education	05	7.9
v	Post-graduate education	-	-
	Total	**63**	**100**

Source: Fieldwork 2023

From the available information, it is revealed that less than 5 percent of the participating farmers do not have the benefit of attending school, while about 24 percent only have the grace to attend and finished primary school and the majority of the participating farmers with 65 percent are able to attend and finished secondary school education. About 8 percent are graduates, while there is no post-graduate participant among the farmers. This, therefore, demonstrates lack of interest in agriculture among the youth. This might have been the result of lack of adequate incentives for such type of work from the governments.

Table 3. Sex distribution of the respondent farmers

Sn	Sex	Frequency	Percentage
i	Male	51	81.0
ii	Female	12	19.0
	Total	63	**100**

Source: Field work 2023

It is obvious from Table 3, that there are more male participating farmers than the female ones with 81% and 19% respectively. Although, the situation does not hold when it comes to the issue of buying and selling of the products where more than 70% are market women.

Table 4. Marital Status of the respondent farmers

Sn	Status	Frequency	Percentage
i	Single	04	6.4
ii	Married	53	84.1
ii	Divorced	06	9.5
	Total	**63**	**100**

Source: Field work 2023

It is quite clear from available data that all the participating farmers are married. One interesting fact about them is that majority of the households' heads are male and the reported numbers of the household heads mostly are smaller in number than their wives. This suggests that some of them are engaged in polygamy.

Table 5. Nativity of the respondent farmers

Sn	Nativity	Freq.	%
i	Ikere-Ekiti indigene	23	36.5
ii	Other towns from Ekiti	04	6.3
iii	Neighbouring States (Ondo, Oyo, Osun, Ogun, Lagos)	02	3.2
iv	Other States of the federation (Hausa, Kogi, etc.)	34	54.0
	Total	**63**	**100**

Source: Field work 2023

It is not funning to note, that the majority of the participating farmers are non-indigene of Ikere-Ekiti. Available records from Table 5 shows that people from other parts of the country, mostly Hausas dominates, having recorded 54 percent of the respondent farmers, while Ikere-Ekiti indigene only formed approximately 37 percent and people from neighbouring towns and states are 6 percent and 3 percent respectively. This suggests that the orientation of the people in the northern parts of the country towards fadama cultivation is higher.

Period of farming

Two distinct farming tracts are commonly practiced on the flood plain. The first is the inner flood plain which is the fadama proper, where cropping is carried out during the dry season (early November to March/April) depending on the onset and cessation of rainfall in the year of reference. Soil moisture with no irrigation is normally relied on. The second is the outer flood plain, which happened to the drier upland sections of the river valley. This portion of the

area quickly dries up after the floods resulting from their elevation. Hence, the portion is used for normal wet season farming from April to late October.

Method of Clearing

Normally, farm clearing starts in October/November and human labour equipped with traditional implements such as cutlasses and hoes are in use. The use of the traditional implements could be linked to marshy nature of the flood plain which does not permit the use of tractors. At some instances, however, chemicals are applied for clearing and weeding because of insufficient labour. Apart from family efforts, labours are hired, majority of which are people from Kogi State – the Egbiras/Agatus. However, Okada business has drastically reduced the numbers, hence the resort to the use of chemicals (herbicides) for both clearing and weeding in most cases.

Major crops grown

Finding reveals that fruit vegetables such as tomatoes, water melons, okra, and leafy (green) vegetable are the majorly grown on the flood plains. Other crops like maize, onion and carrots are limited in scale. Maize for instance, is grown but mostly used as edges to demarcate each farmer's plots. Apart from the fact that the cultivation of okra, tomatoes and leave vegetables on the flood plains are fast in producing results and can be harvested many times over a long period of time before the expiration of the dry season, thereby yielding more income per farm area than other crops such as maize, which is harvested only once in the season.' There are other reasons which include: the ready market for the crops especially at this period of the year, when numerous festivities (church annual harvest thanksgiving, Christmas and new year, burial, wedding, etc.) require soup ingredients do take place; and the relatively supply of non-perishable vegetables such as onion and carrots from the northern states, make their production at this end on large scale uneconomical.

Harvesting and marketing

Leafy (green) vegetables are harvested nearly every day, while plucking of okra and tomatoes are carried out four days. More hands are engaged during harvesting of okra and tomatoes. The bulk of the products (about 90%) is purchased at wholesale rate from far and near, especially market men and women from Shasha, located in Ikere-Ekiti and Ado-Ekiti. Apart from this, the marketing of the products extends to Ondo and Osun states.

Be that as it may, the prices of the products are considerably controlled by the import of similar products from the northern parts of the country. This tends to discourage some of the farmers from extending their farm sizes in other to increase their supplies.

Irrigation/use of fertilizer

The farmers depend mainly on natural fertilizer and soil moisture provided by the seasonal floods. Few intermediate inputs such as manure generated from the fossils of poultry are used. Except in the tomatoes' nurseries, irrigation is rarely practiced as the clayed soil retains enough moisture to sustain cropping during the dry season. This practice is at variance with what obtains at some parts of the drier north of the country where irrigation is important. This may be due to the shorter period of wet and longer period of dry season and the attendant drought hazard consequences experienced in the northern parts of Nigeria. In addition, soils in the northern parts of the country lose its moisture content faster due to high rate of evaporation, therefore, irrigation is necessary for cropping in the area.

Generally, weeding is done twice before the commencement of harvest. As earlier mentioned, chemicals are mostly used for weeding owing to shortage of labour.

Fadama cultivation in the Area and Benin-Owena River Basin Development Authority

River Basin Development Authority established through decrees, especially the Benin-Owena River Basin Authority is designed for the development of land and water resources which are considered potentials for agricultural purposes and general development in the southern western states had been found wanting for one reason or the other – insufficient fund. No wonder, therefore, that the fadama farmers along Osun river valley in Ikere-Ekiti do not benefit in any form from the scheme. There are many areas in which the River Basin Development Authority could help out. These among others include: flood control, land clearing and preparation, access road construction to remote parts of the valley, provision of extension workers and intermediate inputs like fertilizers, irrigation channels and other infrastructure. However, it is absurd to note that the RBDA has done virtually nothing to assist the farmers in the areas mentioned talk less of giving sort loans to the farmers. The channelization project ever done on a section of the river was carried out by the World Bank just last year (2022) where a few kilometre was concreted to mitigate against flooding. Similarly, dredging of the channels was done by the state government few years back for the same purpose.

It is believed that the utility of the valley could be maximised through research and educating the farmers and the youth in the area. Through this, the valley could be used to grow flood or swamp rice and sugar cane during the wet season. This will further boost agricultural productivity of the flood plain.

Conclusion

Based on the available data, it is obvious that the fadama cultivation along river Osun valley in Ikere-Ekiti has contributed immensely to the economy and welfare of the participating farmers and that of some local traders who earn their income through the proceed of the exercise. Apart from making significant improvement on the economy and welfare of the farmer, the valley has considerably been a source of food production (especially vegetables), provides gainful employment to the participating farmers and still has the potential of providing employment to many more persons especially the youth when fully utilized.

However, it is saddened to note that the fadama farmers do not feel the impact of the Benin-Owena River Basin Development Authority in any way. The authority has failed woefully in assisting the peasant farmers in such areas as giving soft loans, land clearing, provision of modern infrastructure – dam, irrigation channels and equipment, construction of access roads to remote areas of the river valley that could be profitably used for food production round the year.

The farmers mainly depend on natural fertilizers and soil moisture provided by season floods as a result of lack of intermediate inputs. In other words, inputs such as herbicides and insecticides are not available for their use. No provision for improved seedlings and irrigation is not in practice.

In addition, floods from early rains destroy crops, especially when the rains come too early in February and early March. It is worthy to note as well, that no farming activity is carried out in the flood plain during wet season. Moreover, domestic animals such as pigs, goats, and others usually intruded the flood plains and cause destruction of the crops as no good fence exists.

Finally, finding reveals that there is no joint venture such as cooperative society among the farmers. Giving by the words of Yusuf (2003), resource peasant farmers who constitute the majority of rural population do not join cooperative because of lack of money to buy share capital. This seems to be the challenge facing the participating farmers that prevented them from joining cooperative society.

Recommendations

Considering the fact that agriculture still remains at a vantage position as an instrument of economic growth in relation to its income and employment generation, it should, therefore, be

pursued with all seriousness and with vigour, especially fadama farming on river Osun flood plains. Consequently, the following suggestions are advocated:

Based on the fact that the full potentials of the river valley are yet to be exploited, therefore, there is a need to broaden the scope of participation beyond few fadama users that are currently involved. This will be achieved by the assistance or intervention of the Benin-Owena River Basin Development Authority. The RBDA should realise at this juncture that the growing food and the whole question of rural development is not merely a matter of sincerity, but a matter of comprehensive spatial reorganisation involving the use of land and money, a total mobilization of the rural peasants. Therefore, development of infrastructures such as dam, irrigation channels, road construction to distance parts of the valley, etc. should be accorded with adequate attention, while sustainable development on the other hand should not be neglected or negotiated.

Urban and regional planners in the area should as a matter of urgency ensure that the encroachment of illegal buildings towards the flood plains be seriously discouraged. This will put an end to the urban floods are recorded around the flood plains in as much the dredging of the river channel has stopped the river floods.

Finally, the Local Government Authority of reference and the Benin-Owena river Basin Authority should the peasant farmers the area of facilitating soft loan, provision of extension workers and intermediate inputs like fertilizers, better seedlings, storage facilities and processing plants.

It is believed that if these suggestions are strictly adhered to, it will not only boost production, increase farmer’s income and thereby raising their standard of living, but will also encourage the youth employment in the area. Also, the maximum utility of the valley will be guaranteed.

References

Adetunberu, J.O. (2020*). Bush burning and its environmental consequences on fallow land in Ekiti South Western Nigeria*. An unpublished Ph.D thesis, School of Post Graduate, University of Ado-Ekiti. Ekiti State. Nigeria.

Adetunberu, J.O. & Mikanjuola, S.A. (1987). *River valley and food production: A case study of the Ikere-Ekiti section of Osun river valley*. Paper presented at the 30th Annual Conference of the Nigerian Geographical Association held at the Imo State University, Okigwe.

Aigbokhan, B.E. (2001). Resuscitating agricultural production (cocoa, groundnut, cotton, palm oil, rubber, etc.) for exports. *Proceedings of CBN 10th Annual conference of the Zonal Research Units.*

Aladelokun, A.O. (1998). *Remote sensing data for assessing the causes of river flooding in Ekiti State: A case study of river Osun in Ikere-Ekiti*. Unpublished Masters' Degree Dissertation Department of Geography, Federal University of Technology. Minna. Nigeria

Aladelokun, A.O. (2004). River flood generating factors in Ikere-Ekiti. *Knowledge Review: A Multidiscipline Journal. 8(2), 60-68.*

Floyd, B. (1982). The proliferation of projects, slogans and sign painting in rural development: some reflections. *Nigeria Geographical Association Summaries of Paper*. Pp. 223-228

Johnston, B.F. & Mellor, J.W. (1961). The role of agriculture in economic development. *America Economic Review*. Pp. 566-593

Anyanwu, J.C., Calkhenan, H., Oyefusi, A. & Dimowo, F.A, (1993). *The structure of Nigerian Economy (1960-1992). Anambra State Nigeria.* Yolance Educational Publishers Ltd.

Sandra, A.O. (1978). Social redundancy among Nigerian youth: A constraint on socio-economic development. *Behavioural Sciences Journal*. 1(1), 48-56

Yusuf, O.R. (2002). *Primary cooperative and rural poverty alleviation in Nigeria: A case study of Irepodun Local Government Area of Kwara State*. An unpublished M.Sc. dissertation, University of Ilorin, Ilorin. Nigeria.