



Assessment of Rural-Urban Migration among ... Shitu, S. B. (2026)

Assessment of Rural-Urban Migration among Irrigation Farmers in Kano North Senatorial District of Kano State, Nigeria

SHITU, Sa'adu Bako

shitubaako@gmail.com

08061285998

Department of Adult and Non-Formal Education, Yusuf Maitama Sule Federal University of Education, Kano

Abstract

This study investigated assessment on scope and challenges of rural-urban migration among irrigation farmers in Kano North Senatorial District, Kano State. Two research questions were formulated for the study. The design for this study was descriptive survey research. The population of the study was six thousand two hundred and eighty seven (6,287) irrigation farmers in the study area, simple random sampling techniques were used to select the sample size of 361 respondents. Researcher developed questionnaire titled: Questionnaire on irrigation farming and reduction of rural-urban migration (QIFRRUM). The instrument for data collection was a 10 items questionnaire which was validated by research experts and tested with a reliability estimate of 0.68 using Pearson Product Moment Correlation (r) (PPMC). The data collected were analyzed using mean and standard deviation. The findings which emerged from the scope of irrigation rural development programmes includes cultivation of cereals, fruits, vegetables and perishables, poultry production, livestock production, marketing of agricultural produce, transporting products to markets, providing labour and selling inputs to farmers; the challenges facing the irrigation farmers indicate inadequacy of fertilizers and water pump machines, inability to access loan schemes, and inefficient extension services. It was recommended among others things that: government should provide agricultural inputs and farming technologies to irrigation farmers to improve the production level. and credit facilities provided for irrigation farmers to improve their agricultural production, which will lead to the improvement of marketing between companies and farmers: government should intensify efforts in the provision of adequate fertilizers and water pump machines, access to loan schemes to irrigation farmers, adequate technical advice and the provision of efficient extension services, communication and adequate capacity building in order to determine the challenges facing irrigation farmers in the Kano North Senatorial District, Kano State Nigeria.

Keyword: Support, Challenges, Rural-Urban Migration

Introduction

The practice of rural development has been a global phenomenon as well as an age-long intervention effort by governments, non-governmental organizations and philanthropic foundations. Rural development generally denotes the processes leading to sustainable improvement in the quality of life of rural people especially the poor (Singh, 2002). In most developing countries of the world, rural areas occupy more geographical space than urban centers. This is why most rural locations are predominantly agriculture-based. In other words, majority of the people living in the rural areas of most developing nations are practicing subsistence agriculture (farming) as a way of sustaining their livelihood (Abbas, 2016). In many developing nations, there had been a rapid growth of urban populations more than that of rural population due to migration (Andersen, 2013). In Africa, for instance, it has been estimated that between 1990 and 2020 there had been added at least 500 million people to the existing urban population compared to the less than 200 million people in North America and Europe (USAID, 2002). Such rapid urban growth in these African countries, including Nigeria, started even before independence. Nigeria is a typical example of this rapid urban growth, where there had been a tremendous expansion of urban areas, resulting in rapid urbanization at the expense of rural location and leading to rural-urban migration (Ledant, 1982). However, the phenomenon of people migrating to other areas in search of a better life is not a novel one because the nexus of migration either rural-urban or urban-urban with development or otherwise is a subject of debate. Therefore, rural-urban migration results from the search for perceived or recalled opportunities as a result of rural urban inequality in wealth. This inequality is as a result of the imbalance in the provision of social amenities for communities. According to NBS (2014), Erringe (2012) and Muughalu (1992) clearly there was an increase in the rate of rural-urban migration. But the condition of rural areas can be best explained by the nature of the migration of the rural populace into urban areas. For instance, there is a clear imbalance between rural and urban areas in terms of infrastructural provisions and social amenities. These situations affect the nature and system of social production, productivity and social and physical infrastructure as well as worsen the poverty level among rural residents. Hence, migration reduced the production of food and per capita income of rural areas.



Assessment of Rural-Urban Migration among ... Shitu, S. B. (2026)

Furthermore, migration into urban areas brings about a lot of social rural and urban transformation. Some of these social transformations include the mass exodus of people from rural to urban areas, which brings about over-population at urban areas and results to an increase in kidnapping, armed robbery and other social vices. In the rural areas of the Kano North Senatorial District, both raining and dry season agriculture are being practiced. In this area, rural-urban migration is hitherto on the increase. Many youths and adults migrate to cities like Kano, Lagos, Onisha, Aba, Warri, Maiduguri, Port-Hacourt and for the purpose of searching for income, employment, trading, leisure and so on (Ali,2015). However, with the introduction and growth of dry season agricultural activities in some areas in the Kano North Senatorial District through the efforts of River Basin Development Authorities (RBDA) and the Agricultural Development Project (ADP) as well as the prevalence of many dams and irrigation projects has brought hope and succor to the lives of rural-urban migrants (Ango, 2014). With rural irrigation projects as form of rural development programme, the youth can be engaged in many agro-based activities, such as a farm labour, agro-business, transporting and processing agricultural produce and so on. With these home-based economic opportunities through agricultural rural development programmes, rural-urban migration in this area is apparently decreasing. Therefore, what is not clear is, does the programme lack adequate provisions that can support rural dwellers and discourage migration or is there no efficient strategy of creating public awareness on the effectiveness of such programmes in the reduction of rural based poverty.

Statement of the problem

Rural development is an interdisciplinary area of practice which aims at the improvement of the living conditions of rural dwellers. Rural development programmes are aimed at reducing poverty, providing jobs, improving income, imparting useful knowledge, attitude and skills and facilitating ultimate change among rural people. The phenomenon of rural-urban migration is an important feature of rural life that exposes rural youth to various hazards, inculcates dependency, breeds crimes and renders migrant families vulnerable to diseases, rape, hunger and insecurity. The introduction of irrigation rural development programmes in the Kano North Senatorial District is intended to improve the livelihood and wellbeing of rural communities as well as serve as a means of reducing the trend of rural-urban migration prevailing in the area. In some Local Government Areas of the Kano North Senatorial District, such as Bagwai, Bichi, Danbatta, Dawakin Tofa, Gwarzo, Gabasawa, Kabo, Kunchi, Makoda, Rimin-Gado, Shanono, Tofa and Tsanyawa, irrigation agricultural activities are taking place and youth in the area are being employed in irrigation sites as laborers, marketers, transporters, seed multipliers, and so on. This seems to prevent them from migrating out because they have employment and business opportunities at home. However, these programmes and strategies implemented over the years impact on the reduction of rural-urban migration. This study is, therefore, intended to find out the scope and challenges of irrigation rural development programmes in reducing rural-urban migration among irrigation farmers in the Kano North Senatorial District, Kano State.

Purpose of the study

The purpose of the study was to investigate the scope and challenges of irrigational rural development programmes in reducing rural-urban migration among irrigation farmers in Kano North Senatorial District, Kano State. Specifically, the study sought to investigate:

1. Determine the scope of irrigation rural development programmes in the Kano North Senatorial District, Kano State;
2. Examine the challenges facing irrigation farmers in the Kano North Senatorial District, Kano State.

Research Question

The following research questions guided this study:

1. What is the scope of irrigation rural development programmes in the Kano North Senatorial District, Kano State?
2. What are the challenges facing irrigation farmers in the Kano North Senatorial District, Kano State?

Methodology

Descriptive Survey research design was adopted for the study. It is a design in which a group of people or items are studied by collecting and analyzing data from only a few people or items considered to be representative of the entire group (Akuezuilo, 2002). The population for this study comprised the entire Irrigation Farmers from the 13 Local Governments areas in Kano North Senatorial District. According to available statistics there are six thousand two hundred and eighty seven 6,287 (KNARDA 2020 Records). The totals of 361 Irrigation Farmers were selected as respondents for the study out of the total of 6,287 that include irrigation farmers and executive members. The selection was based on the suggestions of the Krejcie and Morgan (2006) table for determining the sample size from a given population. A simple random sampling



Assessment of Rural-Urban Migration among ... Shitu, S. B. (2026)

technique was adopted to select the relevant sample of 361 for the study. In applying the procedure, the researcher utilized two different sampling approaches to select the samples for the study in two phases; purposive sampling procedure and proportionate sampling procedure. The instruments of data collection were self developed instruments titled Questionnaire on irrigation farming and reduction of rural-urban migration (QIFRRUM) by the researcher. The instrument has two sections A and B. Section A has respondent's demographic information while section B had 10 items on the research questions, in the form of modified 4-point likert scale. The answering pattern provided multiple options for the respondents to choose, as Strongly Agreed (SA), Agree (A), Disagreed (D) and Strongly Disagreed (SD), the questionnaires were scored on the scale of SA= 4, A= 3, D= 2 and SD= 1. Therefore, the decision rule is based on the scale that a mean of 2.50 and above is considered as Agreed and a mean of below 2.50 as Disagreed was designed to elicit information from the respondents to indicate their level of agreement or disagreement with the items. The instrument was validated by experts. In order to determine the reliability of the instrument, the test-re-test method was used. The results obtained were correlated using the Pearson Product Moment Correlation (r) (PPMC) and the reliability co-efficient of 0.68 obtained showed the instrument is reliable for use in this study.

Presentation of Results

Research Question one: What is the scope of irrigation rural development programmes in the Kano North Senatorial District, of Kano State?

This research question was answered using frequency and percentages (%). Also, the average mean and standard deviation is presented in the following Table where N=361:

Table 1: Scope of Irrigation Rural Development Programmes

Variables	SA	A	D	SD	Mean	SD	Decision
	F (%)	F (%)	F (%)	F (%)			
It involves selling inputs such as agrochemical insecticide, pesticide, herbicide and seeds to farmers	56 (15.5)	194 (53.7)	111 (30.7)	- -	2.85	0.664	Agree
It involves marketing between companies and farmers	64 (17.7)	194 (53.7)	90 (24.9)	13 (3.6)	2.88	0.855	Agree
It involves cultivation of cereals like wheat, rice, maize and so on	107 (29.6)	175 (48.5)	46 (12.7)	33 (9.1)	2.65	0.817	Agree
It covers the cultivation of fruits like water melon, carrots, garden eggs and so on	94 (26.0)	181 (50.1)	42 (11.6)	44 (12.0)	2.90	0.926	Agree
It comprises the cultivation of vegetables and perishables	78 (21.6)	239 (66.2)	33 (9.1)	11 (3.0)	3.06	0.653	Agree
It involves poultry production	105 (29.1)	193 (53.5)	33 (9.1)	30 (8.3)	3.03	0.846	Agree
It covers livestock production	94 (26.0)	153 (42.4)	46 (12.7)	68 (18.8)	2.76	1.042	Agree
It involves marketing of agricultural produce	191 (52.9)	96 (26.6)	40 (11.1)	34 (9.4)	3.23	0.983	Agree
It involves transporting of product to markets	131 (36.3)	174 (48.2)	8 (2.2)	48 (13.3)	3.07	0.956	Agree
It involves providing labour to producers	87 (24.1)	193 (53.5)	50 (13.9)	31 (8.6)	2.93	0.849	Agree

Field Survey, 2025

The results presented in Table 1 indicate ten variables as the scope of irrigation rural development programmes in the Kano North Senatorial District, Kano State. All the ten (10) scopes presented to the respondents were responded to by the 361 samples. Thus, all the ten items were agreed as the scopes of irrigation rural development programmes in Kano North Senatorial District. The details about this result are as follows: An individual assessment of the scopes revealed that in Item1 the mean score is 2.85 (SD=0.664) which is even above the criterion mean (2.50). This indicates that the respondents



Assessment of Rural-Urban Migration among ... Shitu, S. B. (2026)

agreed on irrigation rural development programme that involves selling inputs, such as agrochemical insecticide, pesticide, herbicide and seeds to farmers, with a frequency of 194 (53.7%), none of the respondents disagreed. In Item 2, the highest frequency of 194(53.87%) agreed that it involves marketing between companies and farmers with a mean score of 2.88 (SD=0.855). In Item 3, the highest frequency of 175(48.5%) agreed that it involves the cultivation of cereals like wheat, rice, maize and so on with a mean of 2.65 (SD=0.817). Similarly, in Item 4, the highest frequency of 181 (50.1%) agree that irrigation rural development programmes cover the cultivation of fruits like water melon, carrots, garden eggs and so on with a mean of 2.90 (SD=0.926). In Item 5, the highest frequency of 239 (66.2%) agreed that it comprises the cultivation of vegetables and perishables with a mean score of 3.06 (SD=0.653), poultry production with a mean of 3.03(SD=0.846). Furthermore, in Item 6, the highest frequency of 193 (53.5%) agreed that irrigation rural development programmes involve poultry production with a mean of 3.03(SD=0.846). While in Item 7, the highest frequency of 153 (42.4%) agreed that it covers livestock production with a mean of 2.76(SD=1.042). In Item 8, the highest frequency of 191 (52.9%) strongly agreed on marketing agricultural produce with a mean of 3.23(SD=0.983). In Item 9, the highest frequency of 174 (48.2%) agreed on transporting products to markets with a mean of 3.07(SD=0.956) and in Item 10, the highest frequency of 193 (53.5%) agreed on providing labour to producers with a mean score of 2.93 (SD=0.849). Overall, all of the participants agreed that all the ten (10) statements in the items were the scope of irrigation rural development programmes because all the mean scores were above the decision rule of 2.5.

Research Question two: What are the challenges facing irrigation farmer’s in the Kano North Senatorial District, Kano State?

This research question was answered using frequency and percentages (%). Also, the average mean and standard deviation is presented in the following Table where N=361:

Table 2: Challenges Facing Irrigation Farmers

Variables	SA F (%)	A F (%)	D F (%)	SD F (%)	Mean	SD	Decision
Inadequacy of fertilizers and water pump machines	104 (28.8%)	243 (67.3%)	14 (3.9%)	-	3.25	0.515	Agree
Access to loan scheme to irrigation farmers	120 (33.2%)	223 (61.8%)	18 (5%)	-	3.28	0.551	Agree
Inadequate technical advice to irrigation farmers	108 (29.9%)	245 (67.9%)	8 (2.2%)	-	3.28	0.495	Agree
Inefficient extension services	129 (35.7%)	202 (56%)	30 (8.3%)	-	3.27	0.605	Agree
Communication and adequate capacity building	153 (42.4%)	193 (53.5%)	13 (3.6%)	2 (0.6%)	3.38	0.584	Agree
Startup capital and irregular fuel supply	147 (40.7%)	208 (57.6%)	-	6 (1.7%)	3.37	0.579	Agree
Poor quality of local manufacturing and frequent breakdown	135 (37.4%)	187 (51.8%)	39 (10.8%)	-	3.27	0.642	Agree
Poor direction and clear strategy on irrigation farming	136 (37.7%)	175 (48.5%)	40 (11.1%)	10 (2.8%)	3.21	0.745	Agree
Poor effective monitoring of irrigation activities	183 (50.7%)	178 (49.3%)	-	-	3.51	0.501	Agree
High costs of inputs	146 (40.4%)	206 (57.1%)	9 (2.5%)	-	3.38	0.535	Agree

Field Survey, 2025

The results presented in Table 2 indicate ten variables as the challenges facing irrigation farmers in the Kano North Senatorial District, Kano State. All the ten (10) challenges presented to the respondents were responded to by the 361



Assessment of Rural-Urban Migration among ... Shitu, S. B. (2026)

samples. Thus, all the ten items were agreed as the challenges facing the irrigation farmers. An individual assessment of the challenges indicated that in Item 1, the highest frequency of 243 (67.3%) agree that inadequacy of fertilizers and water pump machines is one of the challenges with a mean of 3.25 (SD=0.515). In Item 2, the highest frequency of 223 (61.8%) agreed about the inability to access loan schemes to irrigation farmers with a mean of 3.28 (SD=0.551). In Item 3, the highest frequency of 245(67.9%) agreed on inadequate technical advice to irrigation farmers with a mean of 3.28 (SD=0.495). In Item 4, the highest frequency of 202 (56%) agreed on inefficient extension services with a mean of 3.27 (SD=0.605). In Item 5, the highest frequency of 193 (53.5%) agreed on communication and adequate capacity building with a mean of 3.38 (SD=0.584). In Item 6, the highest frequency of 208 (57.6%) agreed on startup capital and irregular fuel supply with a mean of 3.37 (SD=0.579). In Item 7, the highest frequency of 187 (51.8%) agreed on poor quality of local manufacturing and frequent breakdown with a mean of 3.27 (SD=0.642). In Item 8, the highest frequency of 175 (48.5%) agreed on poor direction and clear strategy on irrigation farming with a mean of 3.21 (SD=0.745). In Item 9, the highest frequency of 183 (50.7%) strongly agreed on poor effective monitoring of irrigation activities with a mean of 3.51(SD=0.501). Lastly, in Item 10, the highest frequency of 206 (57.1%) agreed on high costs of inputs with a mean of 3.38 (SD=0.535). Overall, the participants agreed that all the ten (10) statements were the challenges facing irrigation farmers in the Kano North Senatorial District because all the mean score were above the decision rule of 2.5.

Discussion of Findings

The first finding of the study revealed that the scope of irrigation rural development programmes in the Kano North Senatorial District, Kano State includes cultivation of cereals, fruits, vegetables and perishables, poultry production, livestock production, marketing agricultural produce, transporting products to markets and providing labour, selling inputs to farmers and marketing agricultural produce. This result is consistent with the Focus Group Discussion (FGD) session as respondents from Kunchi and Makoda irrigation farmers associations opined that the major scope of irrigation are the above farming. This clearly demonstrates that they had trained many youths, both male and female, in irrigation farming systems. This had helped them to improve their socio-economic condition, thereby providing a means of their livelihood generally and also in the areas of study to determine rural-urban migration. Also, this result complements the findings from the Focus Group Discussion held with other irrigation farmers associations from Dawkin-Tofa, Gwarzo and Bagwai Local Government Areas. These indicate that rural-urban migration is not usually encouraged by their people, but irrigation activities are predominantly engaged by their people, both male and female, respectively. These findings collaborate Oyenyi (2013) and Ugalahi (2016) whose findings revealed that farmers, the cultivation of rice, maize, fruits, carrots, garden eggs, vegetables and perishables, poultry production, livestock production, marketing agricultural produce, transporting products to markets and providing labour to producers. The above findings also were complemented by the responses respondents of the Focus Group Discussion (FGD) session held with various selected irrigation rural development leaders in the study areas.

The second finding of this study indicates that, the challenges facing irrigation farmers in the Kano North Senatorial District, Kano State and shows that the inadequacy of fertilizers and water pump machines, in-ability to access loan scheme to irrigation farmers, inadequate technical advice to irrigation farmers, inefficient extension services, communication and adequate capacity building, startup capital and irregular fuel supply, poor quality of local manufacturing and frequent breakdown, poor direction and clear strategy on irrigation farming, poor effective monitoring of irrigation activities and high costs of inputs were the challenges. The implication of this is that through appropriate rural development programme by government, rural-urban migration can be curtailed, thereby making rural inhabitants economically self-reliant through irrigation rural development infrastructures. The findings also revealed that Government needs to do more to stem rural-urban migration. Government must intensify rural development in Nigeria as expected by majority of the rural populace. People in rural areas have no need to migrate to urban centers if basic social amenities and other variables to make them comfortable are provided. This finding is consistent with that of Oravee (2015), who reported that the challenges of inadequate funding of the river basins could be traced back to 1989, which was instrumental to discontinuing of direct involvement in farming activities by some of the River Basins and Rural Development Authorities consequently leading to the in-effectiveness of the scheme. The attitudes and interests of the participating farmers have a larger role to play when it comes to Nigeria's irrigation farming. The government and its agencies in charge of irrigation systems need to be proactive in discharging their duties and correspondingly provide a platform to encourage and sensitize farmers on the need



Assessment of Rural-Urban Migration among ... Shitu, S. B. (2026)

to engage in irrigation farming rather than on only the rain-fed. In addition, farmers are not interested in the operation and maintenance of the large-scale irrigation facilities. Furthermore, the irrigation farmers leaders revealed that the major constraints in utilizing irrigation potential through large-scale schemes include: Unwieldy functions of the RBDAs resulting in dilution of their functions relating to efficient management of irrigation projects, Scarcity of experienced, dedicated, motivated and technically sound manpower ready to implement the project on a sustainable basis, results in sub-optimal managed projects, Lack of direction and clear strategy on the development of irrigation by the government, Shortage, and at times the delayed release of finances by the government, Unwillingness of small farmers (less-powerfulness) to participate in the scheme as they continue to doubt the reliability and timeliness of irrigation water to them at their tail-end plots, lack of enough fertilizers, engines and agro-chemicals, Inadequate technical advice to irrigation farmers, lack of direction and clear strategy on irrigation farming, canal erosion and land degradation in the field, lack of adequate startup capital and irregular fuel supply, lack of effective monitoring and improper maintenance. These farmers are expected to constitute the bulk of the beneficiaries. Similarly, Adekunle (2015) found out that poor knowledge of irrigation techniques among farmers was one of the factors affecting their participation enlarge-scale irrigation scheme. Those that manage to participate are not equipped with the requisite knowledge for the operations and maintenance of facilities. This problem is one of the current challenges being faced by the large-scale irrigation scheme in Nigeria. Population in cities and sub-urban areas in developing countries, including Nigeria, is expected to increase from 1.9 billion in 2000 to 3.9 billion in 2030. This is principally attributed to rural to urban migration, which is consequent upon dichotomous planning and development many developing countries adopted. This subsequently results in the rural deprived and the urban endowed that translates into improved amenities and economic opportunities in urban centres than rural areas (Abdullahi, Shaibu-Imodagbe, Mohammed, Sa'id & Idris, 2015).

Conclusion

The study revealed the scope of irrigation rural development programmes in the Kano North Senatorial District, Kano State are cultivation of cereals, fruits, vegetables and perishables, poultry production, livestock production, marketing of agricultural produce, transporting products to markets, providing labour and selling inputs to farmers. Therefore, the results also from the data analyses presented revealed that irrigation rural development programmes involve selling inputs, such as agrochemical insecticide, pesticide, herbicide and seeds to farmers, marketing between companies and farmers, cultivation of cereals like wheat, rice, maize, of fruits like water melon, carrots, garden eggs, and of vegetables and perishables, poultry production, livestock production, marketing agricultural produce, transporting products to markets and providing labour to producers in Kano North Senatorial District. Similarly, the findings on the challenges revealed that, inadequacy of fertilizers and water pump machines, inability to access loan schemes, inadequate technical advice, inefficient extension services, communication and adequate capacity building and high cost of inputs. Thus, it can be concluded that despite the above challenges, irrigational rural development programmes enhance communities members to improve their skills, socio-economic status and employment opportunities thereby reduction rural-urban migration in order to stay in their communities.

Recommendation

Based on the findings of the study and discussion above, the following recommendations are made for improving.

- i. Government should provide agricultural inputs and farming technologies to irrigation farmers to improve the production level. Good roads should be constructed for rural areas and credit facilities provided for irrigation farmers to improve their agricultural production, which will lead to the improvement of marketing between companies and farmers and their standard of living.
- ii. Kano State Government should intensify efforts in the provision of adequate fertilizers and water pump machines, access to loan schemes to irrigation farmers, adequate technical advice and the provision of efficient extension services, communication and adequate capacity building in order to determine the challenges facing irrigation farmers in the Kano North Senatorial District, Kano State Nigeria.

References

- Akuezuilo, E.O (2002).*Research and Statistics in Educational and Social Science Application* Nuel Cent Published and Academic Press.
- Andersen, E (2013) Rural Urban Migration in Bolivia: Advantages and Disadvantages, Lopez Bolivia: Institute for Socio-Economic Research, Universidad Catholic.



Assessment of Rural-Urban Migration among ... Shitu, S. B. (2026)

- Abbas, I.M. (2016). The challenge of rural development in a deregulated Economy: A Paper Presented at a National Seminar on Rural Development Resources in a Deregulated Economy Organized by New Nigerian Newspapers in Collaboration with another Green Consultants.
- Ango, A.K. Ibrahim, S. A. Yakubu, A. A. & Usman, T. (2014). Determination of Socio-economic Factors Influencing Youth Rural-Urban Migration in Sokoto State, Nigerian *Journal of Human Ecology*. Volume 6
- Erring, S.O. & Omemo, C.E. (2012). Facilitating Rural Transformation through Community Driven Development Approach: An Empirical Analysis of Community and Social Development Project (C.S.D.P) in Cross River States Nigerian *International Research Journal of Humanities*.
- Ledant, J. (1982). Rural-Urban Migration, Urbanization and Economic Development, *Economic Development and Cultural Change*.
- Moughalu, L.N. (1992): Rural Development in Nigeria a Review of Previous Initiatives, In Olisa Muñiz, O. (1981): Highland Rural-Migration in Northern Chile, Unpublished Master Thesis, Michigan State University, East-Lansing
- Singh, D.P. (2002) a, b & c. Internal Migration in India: 1961-1991, Demography India.
- USAID (2002), Annual Progress Reports
- Ali U. A. (2015) Irrigation Rural Development I Nigeria Scope and Challenges of Irrigation Farming, Unpublished paper
- Adekunle, O. A. (2015). Factors Affecting Farmers Participation in Irrigation Schemes of the Lower Niger River Basin and Rural Development Authority, Kwara State, Nigerian *South African Journal of Agricultural Extension*. Volume 4
- National Bureau of Statistics. (2014). Poverty Profile for Nigeria. *Nigerian Bureau of Statistics*. Abuja, Nigeria.
- Oyeniya, B. A. (2013), *Internal Migration in Nigeria: A Positive Contribution to Human Development*. Research Report ACPOBS/2013/PUB01. African, Caribbean and Pacific Observatory on Migration, Brussels.
- Oravee A (2015). Lower and Upper Benue River Basin Development Authorities and Rural Development: A Comparative Study *Research on Humanities and Social Sciences*.
- Ugalahi, U. B. Adeoye, S. O and Agbonlahor. U. M. (2016). Impact of Irrigation Potentials and Rice Self-sufficiency in Nigeria: A Review *African Journal of Agricultural Research*.