

# Rural Out-Migration: A Catalyst For Agricultural Development And Environment Regeneration In Bekwarra, Cross River State, Nigeria

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## ABSTRACT

The rate, frequency and intensity of migration are increasing across the globe with dire consequences to source and receiving areas, however, out-migration can be a catalyst for development and natural resources conservation. Hence, the study examined the impacts of rural out-migration on agricultural development in Bekwarra, Cross River State, Nigeria. Specifically, the study: i. determines the impacts of out migration on agricultural and natural environment ii. the extent to which remittance from out migrants influence agricultural development in Bekwarra, Cross River State. One hypothesis was formulated and tested at 0.05 confidence limit. A survey design was adopted for the study using purposive and simple random sampling technique to elicit responses from three hundred and eighty (380) respondents drawn from the total number of farmers in the area. Findings revealed that out-migration has induced extended fallow time in some instance thereby allowing agricultural land to regain its fertility. Also reduce labour has informed changes from a more diverse cropping system to less intensive non-diverse cropping systems that has implications for the environment and food security of households. Chi-square statistical tool was used to test the stated hypothesis and the findings revealed remittances from migrants have a significant impact on agricultural development. It was recommended among other things that government should provide more social amenities and employment opportunity to curtail the exponential exodus of the youths from the area to other cities.

**Key words:** Agricultural development, Migration, Remittance, Environment, Regeneration

## INTRODUCTION

Migration has become of cardinal concern globally. Migration is masterminded by the marked differences in the concentration of social and infrastructural facilities between rural and urban areas. The spatial differences initiate the exodus of people particularly from rural to urban areas in the search for employment opportunity, educational pursuit and improved living standard. This phenomenon according to Omonigho and Olaniyan (2013) has affected both the source and destination areas. While it increases the population size, energy consumption and demand for social amenities in urban areas, it reduces the population size, agricultural productivity and the rate of social development in the rural communities.

Rural-urban migration has retarded drastically the development of the various sectors of rural systems ranging from agricultural to infrastructural development (Mgbakor, Uzendu & Usifo, 2014). In the agrarian sector the labour supply is greatly reduced and this consequently

reduces the output because agrarian output in developing countries with low technology is human labour dependent amongst other things such as land and capital. Migration can be inter-regional or intra-regional (Eni & Abua, 2006). The inter-regional migration is simply the movement of people between two or more geopolitical regions. The intra-regional migration on the other hand refers to the change in residence of people within a given country. Rural-urban migration is the most common form of intra-regional migration experienced globally today. This pattern of movement was predominant in the advanced countries about a century ago. This is because the advent of industrial revolution of the 18<sup>th</sup> century led to the emergence of large local centers which absorbed parts of the excess rural population (Ebong & Ananimashaun, 2006). Currently, this phenomenon has greatly been reduced in advanced countries due to the reduction in spatial differences between rural and urban areas in the developed countries. In contrast, the developing countries of the world are witnessing a rapid increase of rural-urban migration and this has been considered as occurring at an alarming proportion.

Increased in the agricultural output is dependent upon soil, climate, capital, and above all, labour. The agricultural sector in Nigeria contributed about 80 percent to the economy of Nigeria in the early 1960s and this was possible because about 75 percent of the population lived in rural areas and obtained their means of livelihood from agriculture. Ironically, this sector of the economy has been doing very badly in the past few decades. For instance, in 1965, agricultural export accounted for as much as 76 percent of Nigerian foreign earning, 43 percent in 1970 while the contribution falls to about 6 percent in 1976, 3.9 percent in 1989 and 1.4 percent in 1992 (Mgbakor, Uzendu & Usifo, 2014). This decline in the agricultural sector production has been adduce to the exodus of people agricultural labour force from the rural from farm communities.

The literature is replete with the contributions of rural-urban migration to the inefficiency in agricultural productivity. What is missing is how rural-urban migration serve as a push for natural environment regeneration and that is the focus of this study.

### **Aim and objectives of the study**

The aim of this study was to assess the impacts of migration on agricultural development and environment regeneration in Bekwarra Local Government Area of Cross River State with the following specific objectives:

- i. Ascertain the impact of out-migration on agricultural practices in Bekwarra, Cross River State.
- ii. Determine the extent to which remittances from out-migrants influence investment in agricultural development and environment regeneration in Bekwarra, Cross River State.

We therefore hypothesize that:

- i. Remittances from out-migrants do not have a significant impact on agricultural development in Bekwarra Local Government Area of Cross River State.

### **REVIEW OF RELEVANT LITERATURE**

The literature on rural-urban migration is robust in Nigeria with respect to depletion of agricultural labour force. For Instance, Ekong (2003) is one of the proponents who hold that rural out migration negatively affects the agricultural potentials of the rural communities. This according to him is true in that the major factor of agriculture (i.e labour) is greatly reduced and this consequently reduces agricultural productivity. This claim is further elaborated by Adams and Adams (2007) who stressed the role of human labour in all the production phases, especially in developing countries where mechanized agriculture is still at infancy. They

conclude that until a reduction in rural out migration is given a due consideration; farmers' output will continue to decrease.

To Nwachukwu (2003), agricultural productivity increases with an increase in labour supply. According to the Submissions of Food and Agricultural Organization (2001), United Nations Food Emergency Council (2001), and Aid American Development Agency (2000), rural-urban migration is a major factor responsible for the acute labour shortage experienced in rural communities particularly in sub-Saharan Africa. This labour shortage thus reduces the capability of such regions to produce adequate foods for its population. In the views of Fred (2001), Bassey and Essien (2003) agricultural productivity is directly related to labour supply in that an increase in labour supply increases agricultural output and vice versa. This goes to show that a country with an inadequate supply of labour to effectively sustain its agricultural production will hardly achieve her food security objectives (Didden & Person, 2004). To Knight and Sang (2003), farm requires adequate labour supply which in Nigeria is usually supplied by able young rural dwellers. They however concluded that the continuous movement of this sect from rural communities is accompanied by a sharp decline in the quantity of food which is a major derivative of agriculture.

These views are however in contrast with other scholars who believe that rural-urban migration greatly favours agricultural productivity. In a research carried out at Nyamira District of Kenya, Nyamieri (2011) discovered that rural-urban migration is a livelihood strategy for both the migrants and their families left behind. According to her, rural-rural migration is a part of income diversification strategy where remittances are being sent back to the farming households to help reduce the risk incurred in both the subsistence and commercial agricultural activities. Atu and Iwuanyanwu (2017) in their study on the socioeconomic implication of labour migration in Akpabuyo Cross River State found out the migrants contribute significantly to their destination regions. Ajaero and Onokala (2003) in "the effects of rural-urban migration on rural communities in southern Nigeria" posit that rural-urban migration is a survival strategy utilized by the poor especially the rural dwellers. This is because, the rural-urban migrants sent remittances to their relatives in the rural areas and this remittance-receiving households use the remittances for various purposes including agriculture. In a similar view, Ekong (2003) maintained that migration offers migrants ample opportunities to acquire new skills and broaden their horizons. He further pointed out that the returned migrants bring cultural innovation and technological changes to their homes. According to him, the early adopters of rice cultivation in Abakiliki area of southeast Nigeria were migrant farmers who brought rice with themselves from other areas.

The literature has shown what occurred in the agricultural sector with reduced labour, and how remittance can offset the absence of family labour, but what has not been captured is what happened to the land in the absence of surplus labour or how farmers mitigate the shortage of labour. That is the focus of this research.

## METHODOLOGY

### Study area

Bekwarra Local Government Area is located in the Northern axis of Cross River State between longitudes 8° 05' 38" and 8° 59' 0" and latitude 6° 41' 45" and 7° 02' 10" north of the equator east of the Greenwich meridian. It is bounded in the north by Benue State, east by Obudu Local Government Area, south by Ogoja Local Government Area and west by Yala Local Government Area. The region has a total land area of about 306km<sup>2</sup> (118sq miles) with an average elevation of 129 meters (423 feet) above the sea level. According to the 2006 census, Bekwarra Local Government Area has a total population of over 105,822 people with a density of 346 persons

per square kilometer. Given the population growth rate of 2.9%, the population of the study area is expected to double itself by 2031. Bekwarra Local Government Area has its administrative headquarter at Abouchiche. The area is divided into ten council wards and these include Ugboro, Ibiaragidi, Ukpah, Abouchiche, Nyanya, Beten, Otukpuri, Gakem, Afrike 1 and Afrike II. The region consists of a rich cultural heritage with each village having a unique dancing group and compose songs in the local languages. Christianity is the major religious practice.

Bekwarra is situated within the tropical climate and experiences two distinct seasons namely; dry and rainy seasons. According to Ogar (2009), the rainy season extends from April to October while the dry season spans from November to March. Soil types found in the area include peat (swamp), sandy and loamy soils. These climatic and soil conditions enhance agricultural activities. The people are strongly involved in subsistence and commercial agriculture. Infact, agriculture contributes about 80% of the income of the people. This is either derived from crop cultivation or animal husbandry and in some cases from both. Crops cultivated include rice (*Oryza sativa*), yam (*Discorea spp*), maize (*Zea mays*), groundnut (*Arachis hypogeal*), cassava (*Manihot spp*), sweet potatoes (*Ipeomea batatas*), oil palm (*Elais guinea*), cowpea (*Vigna ugniculata*), okra (*Abelnoscus exculentus*), water leaf (*Talinum triangulare*) etc. Besides, the presence of large undulating grassland in the area favours the rearing of animals such as goats, sheep, cattle and pigs. Poultry is common in every household.

### Sources of data

Data used in this study were obtained from both primary and secondary sources. Primary data source was the questionnaires distributed to registered farmers in the study area. The secondary data on the other hand were obtained from National Population Census Publications, journals and textbooks and farmers cooperatives in each study community.

### Population

8000 farmers are registered across the communities and the Taro Yarmane's minimal sample was adopted in drawing out sample for the study. The formular is given as:

$$\frac{N}{1 + N (e)^2}$$

Where: N = population size, e = level of confidence (taken as 0.05) and 1 = constant. Hence, 380 were distributed. Therefore, 380 samples were drawn for the study.

### Sampling

The simple random sampling technique and purposive sampling technique were adopted for this study. The purposive sampling was used to choose 15 out of the 38 communities in Bekwarra LGA and the simple random sampling was used to administer the questionnaire. The communities and sample sizes are depicted on Table 1.

**Table 3.1: Sampled communities and sample size**

<b>Communities</b>	<b>Identified farmers</b>	<b>Sample size</b>
Utukwe	900	43
Ibiaragidi	700	33
Ugboro	480	23
Bewo	400	19
Ochagbe	450	21
Beten	350	17
Gakem	1000	48
Akwurinyi	400	19
Achibang	300	14
Ukpada	100	48
Ikanda	470	22
Utugbor	600	28
Ijibor	300	14
Ikparikobo-Iye	150	7
Alumonye	500	24
Total	8000	380

**Source: Researchers Field Work.**

### Analysis

Percentages, means and frequency distribution were the descriptive means of analysis. These tools were used to present data about the age, sex, educational qualification, occupation among other socio-demographic characteristics of the respondents. The chi-square ( $\chi^2$ ) statistical tool was however used to test the stated hypotheses set for this study. The chi-square statistics is given as:

$$X^2 = \sum \frac{(O-E)^2}{E}$$

Where:

$X^2$ = Chi-square

$\sum$ = Summation

O= Observed frequency

E= Expected

The hypotheses were tested at 0.05 confidence limit with the degree freedom given as  $(r-1)(c-1)$ . Where  $r$  = number of rows,  $c$  = number of columns and 1 = constant.

## RESULTS AND DISCUSSION

### Results

#### *Source of farm labour*

results on Table 2 shows over 67 of farmers source labour from family members, 13.16 percent use labour from their farmers' associations and other organization and only 5.56 percent of the farmers employ the use of machines for labour. This result has implication for agricultural labour force as findings on Table 3 show that 68 percent of the agricultural household have their source of labour out-migrated from the study area and only 32 percent have their entire family labour residing and working on the farms.

**Table 2: Sources of agricultural labour force in Bekwarra**

Sources	Frequency	Percentage
Associations	50	13.16
Hired	40	10.52
Family	255	67.11
Machinery	20	5.26
Others	15	3.95
Total	380	100

**Table 3: Level of out-migration of family labour force**

Location	Frequency	Percentage
Home residents	120	32
Other towns	260	68
Total	380	100

To determine how reduce migration influence agricultural development and the natural environment the respondents were asked how the offset the labour needs of their farm activities. Responses collated on Table 3 illustrate that 22 percent of the farmers have reduced their extend of farm holding, 5. 30 percent have changed the species of crops cultivated mostly to better yielding crops, 21.05 percent have reduced the diversity of crops cultivated, fallow time has been extended and reduced by 13 and 10 percent respectively, while 3.0 percent make use of hired labour and labour efficient machinery.

Out-migrants remittance to source family is high (70 percent) Table 5 and supported by results of the tested hypothesis but, this does not translate to hiring of enhance labour efficient tools for production as only 3 percent of the farmers utilize machinery for the farm activities

**Table: 4: Impacts of out-migration on agriculture and environment**

	Frequency	Percentage
Reduction in area tillage	82	22.00
Change in crop species	20	5.30
Reduced diversity of crops	85	21.05
Change in crop types	50	13.20
One crop cultivation	34	9.00
Extended fallow	50	13.20
Reduced fallow	39	10.30
Use of improved machinery	10	3.00
Hired labour	10	3.00
Total	380	100

**Table 5: Investment of out-migrants remittance on agricultural development**

	Frequency	Percentage (%)
Yes	267	70
No	113	30
Total	380	100

### **Test of Hypothesis**

H<sub>0</sub>: Remittances to rural farmers do not have a significant impact on agricultural development in Bekwarra Local Government Area.

To test hypothesis II, the question number 16 which states that “does the financial assistance from migrants increase your agricultural output? was used. The responses are presented in Table 6.

**Table 6: Contingency table showing the impact of remittances on agricultural development**

	Male	Female	Total
Yes	98 (a)	169 (c)	267
No	74 (b)	39 (d)	113
Total	172	208	380

Before computing the chi-square value, the expected frequencies must be obtained and these are calculated using the formula:

$$\frac{\text{Row total} \times \text{column total}}{\text{Grand total}}$$

$$\text{Cell a} = \frac{172 \times 267}{380} = 120.8$$

$$\text{Cell b} = \frac{172 \times 113}{380} = 51.1$$

$$\text{Cell c} = \frac{208 \times 267}{380} = 146.1$$

$$\text{Cell d} = \frac{208 \times 113}{380} = 61.8$$

**Table 7: Computation of chi-square**

Cell	Fo	Fe	fo-fe	(fo-fe) <sup>2</sup>	$\frac{(\text{fo-fe})^2}{\text{Fe}}$
A	169	146	23	529	3.6
B	39	61	-22	484	7.9
C	98	120	-22	484	4
D	74	51	23	529	10.3
Total	380				25.8

Therefore,  $X^2 = 25.8$

$$\text{Degree of freedom (df)} = (r-1)(c-1) \\ = (2-1)(2-1)$$

1 under the confidence limit of 0.05 = 3.841.

Since the calculated chi-square ( $x^2$ ) value (25.8) is greater than the table value (3.841), the null hypothesis ( $H_0$ ) is rejected but the alternate hypothesis is accepted. Therefore, remittances to rural farmers have a significant impact on agricultural development in Bekwarra Local Government Area of Cross River State.

### DISCUSSION

The findings reveal that out-migration has a significantly reduced the extend of land in cultivation, the fallow years in distant farms have also been increased while farms close to the settlements are cultivated intensively. This result has implications for the environment as prior

degraded forest are allowed to regenerate while nearby surroundings are degraded. Also the farmers are forced to try out new crop varieties which is a welcome development in the study area that is a traditional setting with set ideas on the types of crops to cultivate. But, the abandonment of labour intensive crops such as yams and cassava that require high labour to prepare the mounds and stake as in the case of yams has food security implication in the vicinity as the shortfall in the food needs is met by buying from neighbouring states and community. Little wonder the remittance from out-migrants cannot be plowed into the farm activities as it is employed in meeting the immediate food needs of the family. However, the replacement of these crops with ground and cowpea is significant for the soils as these crops are known to add nutrients (nitrogen) to the soils. This result is in tandem with the findings of (Ekong, 2003; Adams & Adams 2007) who believed that the movement of people away rural-urban migration reduce agricultural labour leading to a decline of agricultural output. Furthermore, (Fred 2001; Bassey and Essien 2003), studies demonstrate that agricultural productivity is directly related to labour supply in that an increase in labour supply increases agricultural output and vice versa. To Didden and Person (2004), a region with an inadequate supply of labour to effectively sustain its agricultural production will hardly achieve her food security objectives. Besides, Knight and Sang (2003) opined that the continuous movement of the active population away from an area is accompanied by a sharp decline in the agricultural output of the inhabitants.

The significance of the out-migrant remittance in the study in affording the families to meet the shortfall of their household needs by buying from the larger market rather than in enhancing their own productivity. This finding is in harmony with existing studies (Nyamieri 2011; Ajaero & Onokala 2013 & Ekong 2003) that show that rural-urban migration is a livelihood strategy wherein remittances are sent back to the farming households so as to help them reduce the risk incurred in both subsistence and commercial agricultural activities.

### CONCLUSION

Migration has a significant impact on agricultural development because as able labour force move out with no requisite technology to moderate low labour input farmers are forced to adopt more efficient farm practice as changing to higher yielding crops, elongating fallow years thereby regenerating the fertility of the soil that would enhance future farm enterprise. On the other hand, changing cropping pattern from a more divers cropping systems to single crop systems has implications for the environment and household food security as evidence by the study. Also, remittance, to source family is not invested on labour equipment but is used to pay for hired human labour. Therefore, the study recommends that rather than abandoning diversity in cropping systems and cultivation of energy intensive crops like tuber crops, the home remittance should be utilized by the farmers to acquire modern tools to aid their enterprise.

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