

DIASPORA REMITTANCES AND GROWTH OF THE AGRICULTURAL SECTOR IN NIGERIA

CHUKUNALU MGBOMENE¹

Delta State University, Nigeria
Email: chukunalum@delsu.edu.ng

Abstract

This research work focused on diaspora remittances and growth of the agricultural sector in Nigeria. Annual time series data on workers remittances, migrant remittances, foreign direct investment and exchange rate were employed in the research. Using econometric techniques (error correction model and the vector auto regression model), the research found that workers remittances, migrant remittances and FDI have increased the output of the agricultural sector in Nigeria. Exchange rate decreased the inflow of official remittances to the agricultural sector. The study concluded that for the period 1990 – 2022, remittances had enhanced the output of the agricultural sector with migrant remittances having the most effect. Thus, the main recommendations was that government should pursue the unified exchange rate policy, intensification and sustenance of the inflow of remittances to the agricultural sector through the provision of a formal channel for Nigerian workers and migrants to send in monies into Nigeria without rigorous hurdles.(C12,F24,Q14)

Keywords: Agricultural sector, exchange rate, foreign direct investment, remittances.

JEL Classification: F24, N57

1. BACKGROUND TO THE STUDY

According to the World Bank (2022), Nigeria continues to be the leading beneficiary of diaspora remittances in Africa and the seventh largest recipient among low and medium income countries (LMICs) globally. Diaspora, in general, refers to a group of individuals from the same nation who have spread or moved to various countries. The explanation is that this community of people may have been forced or chose to leave their country to live in other places (Akeerebari, 2022). Thus, the money they send home from overseas is referred to as diaspora remittances in this study. Loto (2019) and the World Bank (2021) identified two key categories of

¹ Department of Economics, Delta State University, Abraka, Nigeria

diaspora remittances: workers' remittances and migrant remittances. They defined workers remittances as funds sent from Nigerian workers overseas who have a permanent residency status, whereas migrant remittances are funds sent from Nigerians abroad who do not have a resident visa and wish to go back home to invest. The distinguishing aspect between migrants and workers' remittances is that migrant remittances are intended to be invested back home by the remitters, whereas workers' remittances are not just intended for investment but also for consumption by family back home.

Remittances are a 21st-century phenomena that may be traced back to the Western industrial revolution. Many scholars think that throughout the industrial revolution, farmers and laborers began migrating to larger cities in search of jobs. They frequently sent money to their family back home to help them satisfy their basic necessities. Just like it did back then, remittances continue to assist families throughout the world pay ordinary costs.

The Nigerian diaspora population has steadily grown during the post-SAP period (De-Hass, 2006). Nigeria contributed for 65 percent of officially recognized remittance flows to Africa and 2 percent of total flows. As of 1999, Nigerians residing abroad remitted US\$1.3 billion (Babawale 2008). The Central Bank of Nigeria (CBN) began collecting statistics on remittances in 2002, over a decade after the World Bank had formal records on remittances to Sub-Saharan African countries. The World Bank recorded remittances of roughly US\$1.8 billion and \$2.26 billion in 2000 and 2004, respectively (Hernandez-Coss, 2006). In 2005, the sum remained at \$6.5 billion; this figure climbed in 2007, rising to \$17.9 billion from \$10.5 billion in 2006; and \$18.2 billion was transferred into the nation in 2009 (Oboh, 2011).

In 2014, the Nigeria Diaspora Commission (2020) stated that 17.5 million Nigerians resided in other nations, with the United Kingdom and the United States hosting more than two million Nigerians. According to a recent analysis produced by Agosto Consulting in 2021, Nigeria receives more than \$21 billion yearly in diaspora remittances, making it the continent's second-largest beneficiary of remittances, just after Egypt. In 2021, overall remittance inflows to Nigeria from migrants and workers accounted for around 5% of Nigeria's gross domestic investment (World Bank, 2021). It is proven that for decades, remittances from Nigerians living abroad have considerably helped to domestic revenue, social welfare, and economic growth in different sectors, including agriculture (World Bank, 2022).

According to the World Development Indicators (WDI), by 2021, remittances would have outpaced foreign direct investment (FDI) and other capital inflows, ranking second only to oil as Nigeria's foreign exchange earner (Ime et al, 2020). According to the World Bank (2021), Nigeria has risen to the top five global remittance recipients, accounting for up to 82% of overall remittance inflows to West African nations in 2021. Given these statistics, the main problem identified in this

study is that despite the significant flow of remittances into the country, not much is known about the impact it has on the agricultural sector of the Nigerian economy. Furthermore, empirical evidence shows that numerous researchers have directed their research efforts towards the study of diaspora remittances and economic growth in Nigeria (Dridi et al, 2019; Anetor, 2019; Amakom and Iheoma, 2019; Agu, 2020 etc.). Literature on remittances and growth of the agricultural sector has remained scarce and hugely unexplored. This serves as a motivation for this study and it is based on this premise that this study focuses on four constructs of diaspora remittances namely workers remittances, migrant remittances and foreign direct investment and exchange rate and how they affect growth of the agricultural sector in Nigeria.

Objectives of the Study

This study has the main objective of examining how diaspora remittances affect growth of the agricultural sector in Nigeria. Specifically, the objectives are to:

1. Determine the effect of workers remittances on the growth of the agricultural sector in Nigeria;
2. Ascertain the extent to which migrant remittances have affected growth of the agricultural sector in Nigeria;
3. Analyze the relationship between foreign direct investment inflows and growth of the agricultural sector in Nigeria;
4. Investigate the effect of exchange rate on the remittances – agricultural sector growth nexus in Nigeria.

This study will be of utmost benefit to stakeholders and investors in Nigeria as it will enhance knowledge of how remittances inflow affect Nigeria's agricultural sector, it will provide a blueprint for government policies as it relates to diaspora remittances that will boost agricultural productivity and provide useful empirical background and theoretical foundation for further studies in this area. The study assumes no significant relationship between the diaspora remittances variables and agricultural sector growth by analyzing the following hypothesis:

- H01: Workers remittances have no significant effect on growth of the agricultural sector in Nigeria.
- H02: Migrant remittances have no significant effect on the growth of the agricultural sector in Nigeria.
- H03: There is no significant effect of foreign direct investment on the growth of agricultural sector in Nigeria.
- H04: There is no significant effect of exchange rate on the remittances – agricultural sector growth nexus in Nigeria.

The scope of the study is within the period of 1990- 2022. The choice of this period is precipitated on the availability of time series data from the World Bank

and the Central Bank of Nigeria and the need to fit an econometric analysis that requires a large data set.

2. LITERATURE REVIEW

Diaspora remittances to Nigeria, now in the billions of US dollars, are mostly received in local currencies (naira), and only recently (after a CBN review) are they being received in hard currency--dollars or euros, depending on the location of origin. According to Khan et al. (2019), inflows from rich nations to developing countries fluctuate over time; nonetheless, migrant remittances are the most significant sources of foreign income for emerging economies. While diaspora remittances may have an impact on the growth of recipient nations' domestic economies, in the absence of currency diffusion, diaspora remittances must first be converted to a local currency unit--the exchange rate for consumption or otherwise. It implies that the exchange rate has a significant impact on diaspora remittances for the local currency price of either the dollar or the euro, depending on the currency in which the remittances are conveyed. The higher the exchange rate, the greater the home value of the remittance.

Given the enormity of the financial transfers flowing into the Nigerian economy, it is critical to remember that the agricultural sector accounts for more than 17% of Nigeria's GDP and that 75% of the Nigerian population lives in rural regions. Thus, studying the influence of remittances on the agriculture sector is critical for understanding the flow of remittances in Nigeria.

The New Economics of Labour Migration (NELM) is a refined version of neoclassical ideas. Stark and Bloom proposed the hypothesis in 1985, and Stark expanded on it in 1991. According to the notion, "migration is a family decision or household decision rather than an individual decision and is aimed at lessening production and market constraints faced by households in poor developing countries".

The macro approach is the starting point for the new economics of labor migration theory, which differs from neoclassical economics. The macro approach was the first theoretical framework proposed by Stark (1991) to explain labor mobility. It sees migration as the outcome of regional disparities in labour supply and demand. These inequalities might occur at both the international and domestic (or national) levels. International migration is driven by wage disparities between nations and labor markets. According to this argument, if pay differentials were removed, labor migration would cease.

According to this approach, The bulk of labor migration happens from capital-poor/labor force-rich countries to capital-rich/labor force-poor countries, whereas capital flows in the other direction, with the expectation of a higher return on investment in capital-poor countries. This hypothesis also implies that high-skilled people migrate from capital-rich to capital-poor countries in quest of higher

returns on their skills. Thus, production in important sectors in the capital-poor/labor force-rich nations is predicted to be considerably improved, as capital goes in the opposite direction. This idea may be incorporated into the neoclassical growth model to explain capital-output expansion in an economy. In the subsequent eclectic model, capital becomes a major element in determining production, and diaspora remittances symbolize that capital. The output of the agricultural sector is considered to be a result of capital infusion from capital imports.

The impact of diaspora remittances on agricultural growth in Kenya was studied by Kilonzo (2016), who used granger causality and Ordinary Least Squares to find a unidirectional causality between diaspora remittances and agricultural output growth at a 1% level of significance. Several studies, both in Nigeria and outside of Nigeria, have examined how diaspora remittances affect the agricultural sector of the Nigerian economy. Their findings also demonstrated that diaspora remittances greatly enhanced agricultural production growth in the country. However, their interconnections through human capital and technology improvements did not have a statistically significant impact on agricultural output increase in Kenya.

Fardous, Ismat, and Auruo (2018) investigated the influence of remittances on technology adoption in the agricultural sector and employment generation among farmers that have adopted technology in Bangladesh. The relevant data were collected from 60 households, and the regression results revealed that the amount of remittance, savings, farm size, and access to irrigation all had a positive and significant impact on agricultural technology adoption, while the coefficient of number of active males was negative. They discovered that remittances were mostly spent on three items: food, non-food, and durable goods. Asongu and Odhiambo (2021) examined the impact of increased remittances on value addition across economic sectors in Sub-Saharan Africa. Using the Generalized Method of Moments, they discovered large net effects of remittances on added value in the agriculture sector.

Xing (2018) investigated the developmental effects of remittances in farming households in Fiji. The study looked at how remittance money affect agricultural and development at the rural level in Fiji at the micro level, utilizing the most recent household survey data available. Contrary to popular opinion, remittances are not just utilized for food consumption in Pacific island homes; empirical studies reveal that remittances are also used for other purposes in Fiji households. It focuses on remittances as a driver of pro-poor agricultural productivity and diversification.

Dedewanou and Tossou (2021) used the 2014 Living Standards Measurement Study (LSMS) dataset to investigate the causal influence of remittances on sorghum output in Burkina Faso. They employed a Bayesian instrumental variables technique to investigate numerous distinct routes. The study

found that land area, the number of laborers, and the amount of herbicide used were all factors that greatly boosted sorghum yield in Burkina Faso. They also discovered that a 1% increase in remittances caused a 0.938% drop in sorghum yield.

Veljanska (2021) investigated agricultural risk and remittances in Uganda. The study looked at whether families that get more remittances choose to produce a riskier crop portfolio, or if they want to participate in agricultural specialization or diversification. To test the hypotheses, the World Bank's Living Standards Measurement Study-Integrated Surveys on Agriculture (LSMS-ISA) data for Uganda was employed. The findings revealed that remittances had no substantial influence on farmers' risk-taking decisions on crop portfolio diversification. There was some indication that credit-constrained households that received remittances participated in agricultural specialization, which might be considered a wealth impact.

Yang and Batista (2022) investigated the possible impact of migrant remittances on agricultural development in Mozambique. They discovered that the majority of internal migrants send money to their relatives at least once a year. They found that an intelligently designed remittance product that gives migrants greater control over the money they send back home can play an essential role in upgrading Mozambique's agricultural industry through the funding of agricultural inputs. Uddin, Rahman, and Majumder (2022) assessed the impact of agricultural production and remittances on Bangladesh's growth and development. Using the enhanced Dickey-Fuller test, they discovered that agriculture had a beneficial influence on GDP in both the long and short term. And remittances had a favorable influence in the long term, while having a negative impact on GDP in the near run.

According to empirical evidence from Nigeria, Edoun, Ezeanyika, and Mbohwa (2015) calculated the impact of overseas remittances on beneficiaries in the Igbo rural non-farm sector in Southeast Nigeria. They used sample data from foreign remittance-receiving families involved in rural nonfarm income-generating investments. They noticed that in recent years, international remittances have become a substantial source of external development financing. Key findings from their study revealed that families' ratio of foreign remittances invested in rural nonfarm activities (RNFA) to total foreign remittances received decreases as remittances grow. However, there was a favorable association between remittances and expenditure in the rural nonfarm sector.

Akpan, Okon, and Udoka (2018) explored the link between remittances and agricultural output indicators in Nigeria. The impact of remittances was estimated using the ordinary least squares (OLS) technique. The study found that agricultural GDP, Agricultural Productivity Index (API), remittances, and Crop Productivity Index (CPI) all had positive exponential growth rates. However, remittances were shown to increase at a quicker rate than others. Furthermore,

remittance was shown to have a linear and symmetric relationship with both the agricultural productivity index and the CPI.

Onime and Ijeoma (2021) evaluated the relationship between remittances and food security in Nigeria using secondary data from 1980 to 2018. Using data on food security variables generated by aggregation, normalization, and averaging of multiple indicators reflecting the four dimensions of food security and total remittances, they discovered a strong long and short-run association between remittances and food security. In the near term, a positive and substantial association was established between remittances and food security.

Okoh, Ojiya, and Isiwu (2017) explored how migrant remittances affect human capital development and agricultural productivity in Nigeria. The results of the ARDL long-run and short-run regressions revealed that migrant remittances had no significant impact on human capital development in Nigeria during the research period. Furthermore, migrant remittances have a fair chance of developing agricultural productivity for Nigerian families in the long run, but there appear to be no immediate advantages or benefits from migrant inflows to increase in agricultural productivity in Nigeria in the short term.

Isero and Ehighebolo (2023) employed the ARDL model to evaluate data, and the findings showed that, in the short term, a one-lag change in net migration, one-period change in agricultural production, and FDI are statistically significant at the 5% level. Furthermore, in the short and long term, the impact of the explanatory factors on net migration is the same, with FDI having a negative influence and agricultural output having a positive impact. Korgbeelo (2023) explored the impact of finance on agricultural sector performance in Nigeria, with an emphasis on the importance of foreign remittance inflows. The findings revealed that foreign remittance inflows, government investment in agriculture, and loans guaranteed by the Agricultural Credit Guarantee Scheme Fund (ACGSE) had a significant positive effect on agricultural sector performance.

One unique aspect of this present study is the disaggregation of diaspora remittances into workers remittances and diaspora remittances and the inclusion of foreign direct investment and exchange rate as other variables. None of the previous studies reviewed explored these variables. Again, studies abound outside of Nigeria on the topic of study but there exist little literature within Nigeria. This study aims at closing these gaps identified by estimating the unique model with clues from previous models.

3. METHODOLOGY

This study will use an ex-post facto research design. The researcher's aim to employ secondary data to evaluate the defined hypothesis motivated the use of the ex-post facto design. The data are sourced from the Central Bank of Nigeria

Statistical Bulletin (2022) edition and World Bank Development Indicator, (WDI, 2022). The data are analyzed using the Error Correction Model.

Having examined previous studies, the econometric model of Onyeisi and Odo (2018) is adopted with some modifications. Firstly, we disaggregate remittances as already identified in the literature and introduce the control variables in order to obtain the functional equation:

$$AGR = f(DREM) \tag{1}$$

where AGR represents the output of the agricultural sector while DREM is diaspora remittances. By disaggregating diaspora remittances into the two remittance, we obtain the following specification:

$$AGR = f(WREM, MREM) \tag{2}$$

where:

WREM = Workers remittances

MREM = Migrant remittances

Furthermore, we introduce foreign direct investment and exchange rate as intervening variables in the model and re-specify the model thus:

$$AGR = f(WREM, MREM, FDI, EXR) \tag{3}$$

Transforming the functional equation [3.3] above into linear econometric form, we include the following:

$$AGR_t = \alpha_0 + \alpha_1 WREM_t + \alpha_2 MREM_t + \alpha_3 FDI_t + \alpha_4 EXR_t + \varepsilon_1 t \tag{4}$$

where:

$\alpha_0 - \alpha_4$, are the unknown parameters of the models to be estimated

α_0 = Intercept of the model

ε = Stochastic disturbance or error term and

“ t ” = time period 1990-2022

4. DATA ANALYSIS AND FINDINGS

4.1. DATA ANALYSIS

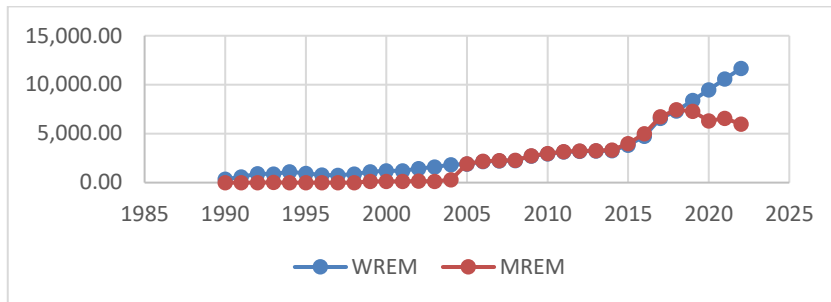


Figure 1. Trends of workers and migrant remittances to Nigeria, 1990-2022

Figure 1 above shows that initially, workers remittances exceeded migrant remittances from 1990 through 2005 by N969bn on the average. There was similar trend of movement for both remittances from 2006 through 2018 averaging N7trn during the period. In 2020, at the heat of the pandemic, workers remittances reached an all-time high of N9.5trn and continued on upward trend growing above the all-time high to N10.6trn and N11.7trn in 2021 and 2022 respectively. In the same period, migrant remittances fell to N6.3trn in 2020 and continued dropping reaching N5.9trn at the end of 2022. We now test the data for stationarity in order to ascertain their suitability for the time series analysis.

Table 1. Summary of Unit Root Test Result (*p-values in parenthesis*)

ADF Test statistics with Trend and Intercept			
Variables	At Level	1 st Difference	Order of Integration
Agricultural Output (AOP)	-1.7919 [0.6843]	-4.3391** [0.0091]	<i>I</i> (1)
Workers Remittances (WREM)	-2.7951 [0.2098]	-4.6218** [0.0046]	<i>I</i> (1)
Migrant Remittances (MREM)	-0.7022 [0.9618]	-4.8669** [0.0413]	<i>I</i> (1)
Foreign Direct Investment (FDI)	-2.4601 [0.0618]	-6.1667** [0.0001]	<i>I</i> (1)
Exchange Rate (EXR)	-2.2891 [0.4272]	-5.2519** [0.0010]	<i>I</i> (1)
Critical Values	1%	-4.2846	-4.2967
	5%	-3.5629	-3.5683
	10%	-3.2153	-3.2184

**denotes significance at 5% level

Source (Researchers' Computation using E-Views 9.0 (*p-values in parenthesis*))

The stationarity test with trend reveals that the data on agricultural sector output (AOP), migrant remittances (MREM), workers remittances (WREM), foreign direct investment (FDI) and exchange rate (EXCR) are all stationary at first difference and are said to be integrated of order one, I(1). Therefore, we conclude that none of the data achieved stationarity at level but only after first differencing. What this means is that the data's statistical features remained constant across the research period, 1990-2022. Based on this conclusion, we test for the presence of a long-run link or cointegration among the variables in the three models developed.

Table 2. Summary of the Johansen Cointegration Tests

Model 1	Trace statistic		Max-Eigen statistic	
	Trace	<i>p-value</i>	Max-Eigen	<i>p-value</i>
None *	122.3739	(0.0000)**	66.48357	(0.0000)**
At most 1 *	55.89029	(0.0073)**	28.40641	(0.0392)**
At most 2	27.48388	(0.0903)*	16.72816	(0.1852)
At most 3	10.75572	(0.2270)	10.75476	(0.1669)
At most 4	0.000960	(0.9756)	0.000960	(0.9756)

Note: ** and * indicates that the test statistics are significant at the 5% and 10%, respectively.

Source: Researchers' Computation using E-view 9

Since the Trace and Max-eigen statistics show 2 cointegrating equations, we conclude that there is long run relationship between diaspora remittances and output of the agricultural sector in Nigeria. The variables in question were identified to be integrated at first difference throughout, and we confirmed the existence of a long-run relationship using the Johansen cointegration test. The next step will be to estimate the relationship between diaspora remittance variables and agricultural sector growth. The estimate technique is the error correction model, which has determined that the variables are integrated at first difference and cointegrated (Egbulonu, 2019). In addition, we shall estimate the long run speed of adjustment of the models in order to ascertain the long run convergence of the dependent and independent variables.

Table 3. Error Correction Model Result

Model 1 (AOP)	Error correction model estimates			
	Coefficient	Std. Error	t-stat	<i>p-value</i>
C	-5.001561	4.210813	-1.187790	0.2470
WREM	0.430788	0.166357	2.589542	0.0164**
MREM	0.392927	0.071674	5.482153	0.0000**
FDI	0.374392	0.091313	4.100104	0.0004**
EXR	-0.125696	0.196927	-0.638290	0.5296
ECM(-1)	-0.501991	0.187500	-2.677287	0.0135**
Adj. R-squared = 0.9616; F-stat = 14.120 (p=0.0000); DW = 1.785				

Note: * indicates that the *p-value* of the F-statistic is significant at the 5% level

Source: Researchers' Computation using E-view 9

Table 3 above summarizes the relationship between diaspora remittance variables and output of the agricultural sector in Nigeria. The speed of adjustment shows long run convergence since it is negative and significant. Thus, at an estimated speed of adjustment of 50.2%, the previous period's disequilibrium in agricultural output will be corrected given steady state of increase of diaspora remittances. This implies that the short run model has good predictive properties. The result further revealed that workers remittances, migrant remittances and FDI increased agricultural output by 0.4307, 0.3929 and 0.3744 units respectively. These represent positive and direct relationships between the three diaspora remittances variables and growth of the agricultural sector. The probability values ($p=0.0164$, 0.0000 and 0.0004) means that the increase in agricultural output occasioned by workers and migrant remittances and FDI was significant. Exchange rate with negative coefficient of -0.1257 and p -value of 0.5296 decreased agricultural output but the decrease was not statistically significant. The intercept is negative which implies that agricultural output decreases by 5.002 units when the diaspora remittance variables are held constant at zero.

The adjusted R-squared gauges the overall fitness of the model. The adjusted R-squared value implies that workers remittances, migrant remittances, FDI and exchange rate explain up to 96.16% of the changes in agricultural sector output in Nigeria. The remaining percentages not accounted for are equally taken care of by the stochastic error term.

Table 4. Test of Hypotheses

Hypotheses	t-statistic (p-value)	Decision Rule
H ₀₁ : Workers remittances have no significant effect on growth of the agricultural sector in Nigeria.	2.5895 (0.0164)	Reject null and conclude that workers remittances have significant effect on agricultural sector in Nigeria.
H ₀₂ : Migrant remittances have no significant effect on the growth of the agricultural sector in Nigeria.	5.4822 (0.0000)	Reject null and conclude that migrant remittances have significant effect on growth of the agricultural sector in Nigeria.
H ₀₃ : There is no significant effect of foreign direct investment on the growth of agricultural sector in Nigeria.	4.1001 (0.0004)	Reject null and conclude that there is significant effect of foreign direct investment on the growth of agricultural sector in Nigeria
H ₀₄ : There is no significant effect of exchange rate on the remittances – agricultural sector growth nexus in Nigeria.	-0.6383 (0.5296)	Accept null hypothesis and conclude that there is no significant effect of exchange rate on the remittances – agricultural sector growth nexus in Nigeria.

Source: Researchers' Computation

4.2. DISCUSSION OF FINDINGS

Findings from the model revealed that workers remittances, migrant remittances and FDI increased agricultural output significantly for the period studied. This means that there is a direct relationship between workers remittances, migrant remittances, FDI and agricultural sector output in Nigeria. The implication is that there is significant increase in agricultural output occasioned by changes in workers and migrant remittances and FDI inflow to Nigeria.

The implication is that the desire of Nigerians working abroad to support their families, friends and/or to invest in their home country have been mostly channeled into the agricultural sector and this has yielded returns. Onime and Ijeoma (2021) made similar observation in their own study. They concluded that a robust long and short-run relationship exist between remittances and food security. Also in conformity are the works of Onime and Ijeoma (2021), Akpan, et al (2018). What these studies try to buttress is the fact that remittances whether migrants or workers have strong developmental effects on the agricultural sector in Nigeria. Knowingly or unknowingly, various households in Nigeria are investing huge funds in the agricultural sector through funds remitted from abroad and this has increased agricultural output significantly.

The International Fund for Agricultural Development (IFAD, 2021) noted diaspora investment in agriculture is four times the worldwide official development aid (ODA) to agriculture; this is in agreement with our present finding. Other studies like Asongu and Odhiambo (2021), Fardous, Ismat and Auruo (2018), Xing (2018), Korgbeelo (2023), etc. found positive relationship between remittance and farming practices as well as on purchase of food, non-food and durable goods. Exchange rate however, decreased agricultural output in the model which confirms the non-favorable exchange rate effect on remittances and growth of the agricultural sector.

5. CONCLUSION

This study analyzed the effect of diaspora remittances on growth of the agricultural sector in Nigeria. After thorough analyses of the data using various econometric techniques, we found that both workers and migrant remittances have had direct positive and significant effect on growth of the agricultural sector of the Nigerian economy. This serves as a boost to the Nigerian economy because through these remittances, households and individuals are able to invest in the real sector thus augmenting government efforts in sustaining output from the agricultural sector.

However, the positive effect of diaspora remittances on agricultural productivity was impeded by higher exchange rates, which depreciated the value of the local currency and made Nigerians pay more for foreign services. The resultant effect is the resort to unofficial remittance channels which does not augur well for the financial system in Nigeria. Interestingly, based on the value of the model

coefficients, the quantum of workers remittances inflow was found to be higher than migrants and other intervening variables.

The conclusion is that workers remittances have had the most effect on the agricultural sector. The flow of FDI was appreciable and helped to grow the agricultural sector but exchange rate remained a problem for remittance in Nigeria as its fluctuations led to fall in agricultural output in relation to remittances. In line with findings made, the study recommends as follows:

1. The study has established that workers remittances are aimed at supporting consumption needs of the beneficiaries in Nigeria, and since they were found to positively enhance growth of the agricultural sector, government should tap into this positive development by intensifying technical exchange programmes between Nigeria and other advanced of the world. This will create the needed synergy and will make Nigeria to reap greater rewards from her vast human and material resources which will further enhance household consumption expenditure and enhance the multiplier effect in the economy.
2. Nigerian government should further encourage foreign direct investment inflow into the country by encouraging Nigerian workers abroad to invest in their home country in the areas of agriculture. With increased investment of foreign investments in Nigeria, the real sector will drive the needed growth of the economy.
3. The Central Bank of Nigeria should set in motion the unification of exchange rates in Nigeria and advance a workable and favorable monetary policy that will ensure stable exchange rate of the naira to the dollar. This move will enhance the formal inflow of funds (remittances) and still help the agricultural sector especially.

REFERENCES

- Agu, C. (2020). Remittances for growth: a twofold analysis of feedback between remittances, financial flows and the real economy in Nigeria. Available at: <https://www.researchgate.net/publication/228466170>
- Akeerebari T,J (2022). Effect of insufficient currency in circulation on the rate of inflation and unemployment in Nigeria: The Buhari's administration experience. *American Journal of Economics*, 6(1), 25 - 47
- Akpan, S.B., Okon, U. E & Udoka, S.J. (2018). Assessment of empirical relationships among remittances and agricultural productivity indicators in Nigeria (1970- 2012). *American Journal of Economics*, 4(1), 52-61.
- Amakom, U. & Iheoma, C. G. (2019). Impact of migrant remittances on health and education outcomes in Sub-Saharan Africa. *IOSR Journal of Humanities And Social Science* 19(8), 33-44
- Anetor, F. O. (2019). Remittance and economic growth nexus in Nigeria: Does financial sector development play a critical role? *International Journal of Management, Economics and Social Sciences (IJMESS)*, 8(2), 116-135,
- Asongu, S. & Odhiambo, N. (2021). Remittances and value added across economic sub-sectors in sub-Saharan Africa, AGDI Working Paper, No. WP/21/002, African Governance and Development Institute (AGDI), Yaoundé
- Babawale, T. (2008). Africa and the African Diaspora: Challenges, Opportunities and Prospects. Lagos: *Malthouse Press*.
- Central Bank of Nigeria (2022). Statistical Bulletin and Statement of Accounts
- Dedewanou, F. A. & Tossou, R. C. (2021). The role of remittances for sorghum production. AERC CREA Policy Brief No.746
- De-Hass,E, (2006). The Myth of Invasion: The inconvenient realities of African Migration to Europe. *Third World Quarterly* 29,(7):1305-1322
- Dridi, J., Gursoy, T., Perez-Saiz, H. & Bari, M. (2019). The impact of remittances on economic activity: the importance of sectoral linkages. IMF Working Paper African Department WP/19/175
- Edoun, E., Ezeanyika, S. & Mbohwa, C. (2015). Do foreign remittances encourage investment in the rural non-farm economy sector? Evidence from Igbos of Southeast Nigeria. *Problems and Perspectives in Management*, 13(1-1), 159-167
- Fardous, A. H., Ismat, A. B. & Aurup, R. D. (2018). Impact of remittance on agricultural technology adoption and employment generation in Lakshmipur District of Bangladesh. *American Journal of Agricultural and Biological Sciences* 14: 16.22 DOI: 10.3844/ajabssp.2019.16.22

- Hernandez-Coss, R. & Bun, E. C. (2006). The U.K. – Nigeria Remittance Corridor: Challenges of Embracing Formal Transfer Systems in a Dual Financial Environment. Paper Presented at the Second International Conference on Migrant Remittances, London, November 13-14, 2006.
- Ime, J. J., Orok, A. B. & Udoka, C. O. (2020). Migrant Remittances and Economic Growth: The Nigerian Perspective. *International Journal of Scientific Engineering and Science*, 4(1), 52-57,
- International Fund for Agricultural Development (2020). Diaspora Investment in Agriculture (DIA) initiative. IFAD Financing Facility for Remittances www.ifad.org/remittances
- Isere, V. O. & Ehighebo, I. A. (2023). The impact of net migration on agricultural output and foreign direct investment in Nigeria. *African Journal of Management and Business Research* 9(1), 96-105
- Kilonzo, K. B. (2016). The impact of diaspora remittances on agricultural output growth in Kenya (1983-2015). University of Nairobi Publications Online Repository 53, 11-72
- Korgbeelo, C. (2023). Funding the Nigerian agricultural sector for improved performance: the role of migrant workers' foreign remittances inflows. *Gusau International Journal of Management and Social Sciences*, 6(3), 181-201 DOI: <https://doi.org/10.57233/gijmss.v6i3.10>
- Loto, M. A. & Alao, A. A. (2019). Remittances and the growth of the Nigerian economy. *Economics Journal and Business Education*, 2(1) 201-232
- Nigerians in Diaspora Commission Act 2017. Nigeria. https://cdn.thenigerianvoice.com/images/content/report_content/8202018110724_diaspora_commission_act_2017__15_pages.pdf
- Oboh, N. (2011). Government considers \$2b Diaspora Fund. Next Newspaper, 25 July 2011. Online: <http://234next.com/> Accessed 25 December 2022
- Okoh, A. S., Ojiya, E. A. & Isiwu, G. D. (2017). An examination of the effect of migrant remittances on human capital development & agricultural productivity in Nigeria: An ARDL Approach. *International Journal of Scientific Research and Management* 5(1), 7518-7528
- Onime, B. E. & Ijeoma, E. K. (2021). Do diaspora remittances guarantee food security in Nigeria? *Journal of Economics, Management and Trade* 27(4): 36-53
- Onyeisi, O.S, & Odo, I. S. (2018). International remittance inflow and economic growth in Nigeria. *IOSR Journal of humanity and social science*, 23(1), 52-64
- Stark, O (1991). The migration of labor. Blackwell Oxford, 11,222-305

World Bank (2022).

Uddin, H., Rahman, H. & Majumder, S. C. (2022). The impact of agricultural production and remittance inflows on economic growth in Bangladesh using ARDL technique. *Business and Economics Review Journal* 2(32), 60-87

Veljanoska, S. (2021). Agricultural risk and remittances: The case of Uganda. Paris School of Economics, C.E.S. - Université de Paris Panthéon-Sorbonne; 106-112, Boulevard de l'Hôpital, 75647

World Bank. (2021). Global economic implications of remittances and migration. Washington DC.

World Development Indicator (2022). World Bank Database www.data.worldbank.org

Xing, Z. (2018). Development impacts of remittances in agricultural households in Fiji. *Remittances Review* 3(1), 19-49

Yang, D. & Batista, C. (2022). Mobilizing migrant remittances for agricultural modernization in Mozambique. International Growth Centre USA