RURAL YOUTH PARTICIPATION IN AGRICULTURAL-BASED LIVELIHOOD ACTIVITIES IN CENTRAL AGRICULTURAL ZONE, CROSS RIVER STATE, NIGERIA

***Comfort F. Aya, Matilda I. Obhiokhenan, Ofem U. Etim and Andrew J. Abang**
Department of Agricultural Extension and Rural Sociology
University of Calabar, Nigeria
**Corresponding author email: comforfel@gmail.com*

Abstract
This study assessed rural youth participation in agricultural-based livelihood activities in the Central Agricultural Zone of Cross River State, Nigeria. The study specifically sought to examine the socio-economic characteristics of rural youths, ascertain the agricultural-based livelihood activities participated in by rural youths, determine the extent of participation and assess the constraints to rural youth participation in agricultural-based livelihood activities. A random sampling technique was used to select 148 rural youth farmers. Data were collected using a set of structured questionnaires and analyzed using percentages and mean statistics. Results of the type of agricultural-based livelihood activities participated in by youths revealed that majority (87.2%) participated in farm labor with a high extent of participation ($\bar{x}$ =3.12) ranked 1st. However, the study revealed that lack of capital/access to credit ($\bar{x}$=3.19; SD = 0.76) was the major constraint to rural youth participation. The result of multinomial logistic regression analysis revealed that sex (0.112), age (1.315), educational level (2.154), years of farming experience (0.205), and estimated annual income (3.112) show a statistically significant influence of the socio-economic characteristics of youths on the extent of participation in agricultural-based livelihood activities at 5% level of significance. The study concluded that youth engagement significantly enhances agricultural-based livelihood but lack of capital emerged as the major constraint limiting their participation in activities in the study area. The study therefore recommends that government and relevant stakeholders design and implement targeted youth agricultural financing schemes and policies to strengthen youth capacity through entrepreneurship training within the study area.

Keywords: Rural youths, Participation, Agricultural- based, Livelihood activities, Central Agricultural Zone.

Introduction
Agriculture is widely acknowledged as a sector with significant potential for generating employment opportunities for youths in sub-Saharan Africa. Globally, it serves as a major source of livelihood for many people and continues to play a crucial role in enhancing food security and reducing poverty across numerous African nations (Mthi *et al*., 2021). According to the World Bank (2019), approximately 76% of the population resides in rural areas, and about 90% of these rural inhabitants are involved in agricultural activities. The agricultural sector contributes about 70% of rural employment and accounts for over 85% of

total rural income (OECD, 2017). When effectively developed, it has the potential to provide sustainable jobs and income for the rapidly increasing youth population in Africa especially in Nigeria, where roughly 69% of young people live in rural areas and rely on agriculture as their main source of livelihood (CBN, 2021).

Rural youth participation in agricultural activities refers to the active involvement of young people in agricultural livelihood pursuits within their communities (Ogar, 2020). Youths represent vital assets to any nation therefore, motivating them to engage actively in agriculture can inject fresh energy, creativity, and innovation into the development of rural communities (Owolabi *et al.,* 2023). Active participation enables young people to contribute meaningfully to their personal growth and the development of their communities. It also helps them acquire essential life skills, gain awareness of human rights and citizenship, and foster positive civic engagement. According to Vihi (2023), the participation of rural youths in farming helps to curb the growing youth unemployment rate in Nigeria.

Agricultural development can reduce poverty directly by enhancing youth participation in farming activities that generate higher incomes, and indirectly through improved labour market opportunities and lower food prices (Aya *et al*., 2025). Chigonda (2017) noted that rural youths in Nigeria possess the potential to participate effectively in agricultural livelihood activities. However, despite being recognized as a major human resource base in the country, many of them show little interest in farming. The declining interest of youths in agriculture is largely linked to the poor state of agricultural productivity in rural areas and inadequate government support (Kwenye & Sichone, 2016). As the backbone of Nigeria's population and future leaders, young people continue to encounter these barriers, which hinder their effective participation in agricultural activities (Eremi *et al*., 2026)

The poor state of agricultural production in rural areas across Africa, largely due to inadequate government support, has led to declining youth interest in agriculture (Tukela, 2019). The absence of effective support systems for young people has further prevented them from taking advantage of the various agricultural opportunities provided by the government (Aya & Eremi, 2015). Also, the persistently low participation of Nigerian youths in agriculture can be attributed largely to inadequate financial resources (Olatinwo *et al.*, 2017). Additionally, many youths remain poorly involved in agricultural activities because of limited awareness, low exposure, indifferent attitudes, inadequate training, and lack of encouragement from traditional leaders and community elders (Cheteni, 2016). To enhance a nation's economic development, it is essential to encourage youth participation in agricultural activities, as they form a vital segment of society and represent one of the greatest assets of any nation (Maisule *et al*., 2023)

Despite the Nigerian government's efforts to engage youths in agriculture, many young people remain only marginally involved in farming, often prioritizing activities they believe will yield quicker financial returns. Notably, policies and programmes designed

to enhance youth participation in agriculture and ensure their active involvement in agricultural initiatives have not been adequately implemented (Twumasi, 2019). As a result, these efforts have had minimal impact. Although several studies have examined youth involvement in agriculture, there remains a scarcity of research focused on assessing rural youth participation in agricultural-based livelihood activities, particularly within the central agricultural zone (Eta *et al*., 2015).

It is widely recognized that youths in Central Agricultural zone are talented, energetic, and highly committed. However, the significance of and challenges associated with rural youth participation in agriculture remain inadequately understood. Therefore, this study aimed to evaluate the level of rural youth participation in agricultural-based livelihood activities within the central agricultural zone of Cross River State, Nigeria.

Materials and methods

The study was conducted in the Central Agricultural Zone of Cross River State, Nigeria, which comprises six (6) blocks: Abi, Boki, Etung, Obubra, Ikom, and Yakurr. Geographically, the zone lies between latitudes 4.00° and 6.00°N and longitudes 6.00° and 9.00°E. It is bordered by Yala and Ogoja to the north, Biase and Abia State to the south, the Republic of Cameroon to the east, and Ebonyi State to the west. The total land area of the region is approximately 7,666 km², representing about 38% of the State's total landmass (20,156 km²), and it is located around latitude 5°45'N and longitude 8°30'E of the Greenwich Meridian. The region has an estimated population of 1,016,818 people (Olah & Okon, 2022).

The zone is characterized by fertile soil, a tropical rainforest climate with high rainfall, and inland valleys that favor the cultivation of crops such as rice, cocoa, yam, and plantain. Agriculture forms the backbone of the local economy, dominated by both smallholder farmers and large public sector farms (Aya & Eremi, 2015). For this study, three blocks; Boki, Etung, and Ikom were randomly selected. From these, nine (9) cells were further chosen at random, and a total of 148 farmers were proportionately sampled. Data were collected using structured interview schedules and analyzed with descriptive statistical tools.

Socioeconomic characteristics were measured using frequency and percentages. Types of agricultural-based livelihood activities participated in by youths were measured by asking farmers to indicate ''yes'' or ''no'' on a list of agricultural-based livelihood activities provided. Any variable ≥ 50% was regarded as high participation, while variable < 50% low participation.

Extent of participation was rated on a four-point likert scale of high, moderate, low, very low. The values 4, 3,2 and 1 were assigned respectively with regards to the listed agricultural-based livelihood activities. The values were added together and divided by 4 to get a mean score of 2.5 which served as the benchmark. Any variable with a mean of 2.5 and above was regarded as high participation ranked in ascending order,

while variable with a mean of less than 2.5 was regarded low participation.

Constraints faced by youths in participating in agricultural-based livelihood activities were rated on a 5- point Likert scale of strongly agreed= 5, agreed= 4, undecided=3, disagreed=2 and strongly disagreed= 1. The values were added together and divided by 5 to get a mean score of 3.0. Any variable with mean of 3.0 and above was considered as major constraint ranked in ascending order, while mean value that were less than 3.0 was considered as minor constraint.

Variables in objectives one and two were analyzed using percentage and frequency while variables in objectives three and four were analyzed using mean statistics.

Multinomial logistic regression analysis was used to test the influence of rural youths' socioeconomics characteristics on the extent of participation in agricultural-based livelihood activities.

Results and Discussions

Socio-economic characteristics of rural youth farmers.

The results on Table 1 reveals that the majority (61.5%) of the rural youth farmers were males. Forty-four percent (44.0%) of the rural youth farmers were within the age bracket of 26 and 30 yrs. This indicates that most of the young farmers were in their formative years, a stage characterized by energy and vigor that can be channeled into productive and meaningful agricultural activities. This finding aligns with the study by Angba *et al*. (2019), which revealed that individuals within this age group are typically active, productive, and capable of contributing significantly to the growth of the agricultural sector and the overall economy. The majority (77.2%) of the youths were single. This shows that they were still under the auspices of their parents and were free to participate in family labour. This finding is consistent with the report of Nyabam *et al*. (2018), who observed that marital status had no significant influence on the choice of livelihood activities among rural youths. Additionally, the results showed that most (56.8%) of the youth farmers had 5 and above members in their households. The majority of youth in this age grade still live in the family house supporting a large farming population. These are normal circumstances in rural communities because the majority of family heads, particularly farmers, think that having more children who will work on the farm is preferable to using outside labour. This might have an impact on involvement in agricultural livelihood. Half (56.1%) of the respondent had secondary education. This implies that most of the youths had one form of education or the other. Close to half (44.6%) had farming experience of 10yrs and above, while 71.6% had bi-monthly extension contact. Fewer extension contacts provide ineffective and unsustainable extension services. This result is in line with Munishi *et al*. (2017), who found that poor visibility of extension personnel hinders youth participation and capacity development. The majority (69.6%) were members of cooperative groups. Membership in a social organization positively affects hours spent by youths in agricultural activities. About a third (37.8%) of the rural youth farmers had an annual

income of ≥ ₦ 1,000,100. As the respondents' wealth increases, the probability of intensively participating in agricultural-based activities will increase. These findings agree with the assertion of Iyamah *et al.* (2024), who found that increase in income motivates increased participation in agricultural activities.

Table 1: **Socio-economic characteristics of respondents**

Item	Frequency	Percentages (%)
Sex		
Male	**91**	**61.5**
Female	**57**	**38.5**
Age		
18-21	34	23
22-25	45	30.4
26-30	69	46.6
Marital Status		
single	115	77.7
Married	33	22.3
Household size		
1-2	23	15.5
3-4	41	27.7
5 and above	84	56.8
Educational level		
No formal education	-	-
primary education,	23	15.5
secondary education	83	56.1
tertiary education	42	28.4
Years of experience		
< 1 yr.	6	4.1
1-4yrs	27	18.2
5-9yrs.	49	33.1
10yrs and above.	66	44.6
Extension contacts		
Fortnightly	8	5.4
Monthly	34	71.6
Bimonthly	106	23.0
Membership of cooperative group		
Yes	103	69.6
No	45	30.4
Annual income		
≤ ₦500,000	9	6.1
₦ (500,100-1,000,000)	42	28.4
≥ ₦ 1,000,100	97	65.5
n=148		

Source: Field survey (2025)

Types of Agricultural-based livelihood activities in which rural youths participate

The result in Table 2 reveals the agricultural-based livelihood activities in which youths participated. They are; farm labour (labour utilized in the farm) 87.2% participated ranked 1st; horticulture (vegetable/fruits production) ranked 2nd; agroforestry (integrating trees into farming) 83.1% participated ranked 3rd, and arable crop production (planting and maintaining crops) 70.3% participated and ranked 4th. The overall result indicates that youths in the study area were participating in agricultural-based activities such as; cocoa, cassava, maize, vegetable, yam, plantain and banana production among others. These activities are youth friendly and the major source of livelihood in the study area, hence the reason for youth participation. This is in line with the findings of Vihi *et al*. (2023) that youths participate fully in activities they perceived to increase their income.

Table 2: Types of Agricultural-based Livelihood Activities in which Rural Youths participate

S/N	Agricultural-based Livelihood Activities Participated	Frequency (f)	Percentages (%)
1	Farm labour (labour utilized in the farm)	129	87.2
2	Horticulture (Vegetable / fruits production)	127	85.8
3	Agroforestry (Integrating trees into farming)	123	83.1
4	Arable crop production (planting and maintaining crops)	104	70.3
5	Livestock production (Raising animals-poultry, pigs, goats)	100	67.6
6	Hunting	94	63.5
7	Food processing (palm oil, palm kernel, groundnut oil etc.)	92	62.2
8	Lumbering/ saw milling	89	60.1
9	Apiculture (Bee keeping)	86	58.1
10	Mixed farming (Combining crops and livestock)	83	56.1
11	Organic farming (Growing crops and raising animals without synthetic fertilizer)	81	54.7
12	Aquaculture (Fishery)	79	53.4
13	Mushroom cultivation	76	51.4

Source: Field survey (2025); (< 50% = Low participation: ≥ 50% = High participation)

Extent of rural youths Participation in Agricultural-based livelihood activities

The result in Table 3 reveals the extent of youth participation in agricultural-based livelihood activities; Farm labour (labour utilized in the farm-$\bar{x}$ *=3.12)* ranked 1st; horticulture (vegetable/ fruits production $\bar{x}$ = *3.08)* ranked 2nd; arable crop production (planting and maintaining crops $\bar{x}$ *=3.04)* ranked 3rd and agroforestry (integrating trees into farming $\bar{x}$ *=3.01)* ranked 4th. Fruits and vegetable farming as well as cocoa production are lucrative livelihood activities associated with the people of central agricultural zone. Youth supply most of the labour needed in these agricultural activities. This supports the finding of Aya and Eremi (2015) who observed that youths engage in better and more lucrative means of livelihoods that will significantly increase their income.

Table 3: Extent of participation in Agricultural Livelihood Activities

S/N	Extent of youth participation in Agricultural –based Livelihood Activities	Mean	Rank
1	Farm labour (labour utilized in the farm)	3.12	1st
2	Horticulture (Vegetable / fruits production)	3.08	2nd
3	Arable crop production (planting and maintaining crops)	3.04	3rd
4	Agroforestry (Integrating trees into farming)	3.01	4th
5	Livestock production (Raising animals-poultry, pigs, goats)	2.93	5th
6	Hunting	2.89	6th
7	Lumbering/ saw milling	2.77	7th
8	Aquaculture (Fishery)	2.68	8th
9	Food processing (palm oil, palm kernel, groundnut oil etc.)	2.59	9th
10	Mixed farming (Combining crops and livestock)	2.54	10th
11	Organic farming (Growing crops and raising animals without synthetic fertilizer)	2.52	11th
12	Apiculture (Bee keeping)	2.50	12th
13	Mushroom cultivation	2.30	13th

Source: Field survey (2025); ($\bar{x}$ < 2.50= Low; $\bar{x}$ ≥ 2.50= High).

Constraints to Rural Youth Participation in Agricultural-based Livelihood Activities

The result in Table 4 reveals the constraints to rural youth participation in agricultural-based livelihood activities. Lack of capital/ access to credit ($\bar{x}$=3.19; SD = 0.76); insufficient land for cultivation/ lack of land ownership ($\bar{x}$=3.14; SD = 0.74); lack of interest due to drudgery in farm operations ($\bar{x}$=3.12; SD = 0.73); and high cost of input / implements like fertilizers and seeds ($\bar{x}$= 3.07; SD = 0.71). Reduced agricultural productivity and low farmer incomes are linked to limited land availability, inadequate financial support, and poor dissemination of information on modern agricultural practices. Access to land is particularly crucial for young people, as their livelihoods in rural areas largely depend on agriculture. These findings are consistent with those of Adesina & Favour (2016), who reported that low income, restricted access to land, insufficient support for agricultural training, and the high cost of farm inputs discourage potential farmers from engaging in agricultural activities. However, farm theft ($\bar{x}$=2.58; SD=0.56) was the least constraint. Youth farmers do not perceive theft as a major threat to their farm produce, livestock, or equipment. This security encourages youth participation. This is in line with the finding of Adesida *et al*. (2021) that reduced risk of theft increases confidence in agricultural investment and livelihood sustainability.

Table 4: Constraints to Rural Youth Participation in Agricultural-Based Livelihood Activities

Constraints to youth participation n=148	Mean	SD
Lack of capital/ access to credit	3.19	0.76
Insufficient land for cultivation/ lack of land ownership	3.14	0.74
lack of interest due to drudgery in farm operations	3.12	0.73
High cost of input / implements like fertilizers and seeds	3.07	0.71
Poor transport infrastructure and social amenities	3.03	0.67
Inadequate labour-saving technologies for ease of operations	3.01	0.68
Lack of awareness/ knowledge on new agricultural practices	2.98	0.69
Poor market access/ competitive market for agricultural products	2.93	0.68
Lack of incentives from government	2.85	0.67
Inadequate training on new agricultural practices	2.79	0.65
Poor visibility of extension personnel /extension services	2.75	0.66
Inadequate youth's empowerment schemes from the government	2.66	0.58
Farm theft	2.58	0.56

Source: Field survey 2025. Decision rule :($\bar{x} \geq 3.0$ = major constraint; $\bar{x} < 3.0$ = minor)

Multinomial logistic regression analysis showing the influence of socio-economic characteristics of rural youths on their participation in agricultural-based livelihood activities

Table 5 shows that sex (0.112), age (1.315), educational level (2.154), years of farming experienced (0.205), and estimated annual income (3.112) were statistically significant at 5% level of significance. This suggests that male youths who are older, more educated, have longer farming experience, and earn above-average income are more likely to engage in agricultural-based livelihood activities than their counterparts. Therefore, the multinomial logistic regression analysis revealed that sex, age, educational status, years of farming experience and estimated annual income significantly influenced rural youths' extent of participation in agricultural-based livelihood activities. Farming experience, estimated income and sex were the strongest predictors of high participation. The model showed good explanatory power with Nagelkerke R^2 of 0.541, indicating that socio-economic characteristics play an important role in determining youths' participation level in agricultural-based livelihood activities within the central agricultural zone. The findings of this study align with those of Ezeano *et al.* (2017), who identified educational level and gender as key factors influencing youth's participation in agricultural-based livelihood activities in the study area. The result also supports the observation of Aya and Eremi (2015), who reported that as farmers advance in age, their years of farming experience increase, which in turn enhances their level of participation in agriculture.

Table 5: Multinomial logistic regression analysis showing the influence of socio-economic characteristics of rural youths on their participation in agricultural-based livelihood

Variable	B	Std error	Wald	P-value	Exp(B)
Sex	0.112	0.035	10.24	0.020*	1.118
Age	1.315	0.441	8.89	0.031*	3.725
Marital status	-0.286	0.084	2.40	0.301	0.331
Educational status	2.154	0.053	8.44	0.043*	1.167
Years of farming experience	0.205	0.048	13.24	0.010*	1.228
Household size	-0.192	0.025	1.47	0.212	-0.998
Estimated annual income	3.112	0.035	11.24	0.014*	1.118
Cox and Snell R^2	0.479				
Nagelkerke R^2	0.541				
McFadden R^2	0.328				

Source: Field Survey, 2025 *P ≤ 0.05

Conclusion

The study was conducted to assess youth participation in agricultural-based livelihood activities in the Central Agricultural Zone of Cross River State, Nigeria. Findings revealed that youth engagement enhances agricultural-based livelihood activities in the area. Among these activities, farm labour recorded the highest level of youth participation. However, several challenges were identified, with lack of capital emerging as the major constraint limiting their involvement. The null hypothesis was rejected, indicating a statistically significant influence of youths' socio-economic characteristics on their participation in agricultural-based livelihood activities at the 5% level of significance.

Recommendations

The study therefore recommends that government and relevant stakeholders should design and implement targeted youth agricultural financing schemes and policies which will focus on strengthening youth capacity through entrepreneurship training, improved access to modern farm inputs within the study area.

References

Adesida, I.E., Nkomoki, W., Bavorova, M., & Madaki, M.Y. (2021). Effects of agricultural programmes and land ownership on the adoption of sustainable agricultural Practices in Nigeria. *Sustainability, 13,* 7249-7265. https://doi.org/10.3390/su13137249.

Adesina, T.K.; Favour, E. (2016). Determinants of participation in youth-in-agriculture programme in Ondo state, Nigeria. *Journal of Agricultural Extension. 2*0:104–117.

Angba, A.O., Adesope, O.M. & Aboh, C.L. (2019) Effect of Socioeconomic Characteristics of Rural Youths on Their Attitude towards Participation in Community Development Projects. *International NGO Journal*, *4*, 348-351

Aya, C. F. & Eremi, E. O. (2015). Effect of Farming Activities on Agricultural Biodiversity Management in Cross Rive State, Nigeria. *International Journal of Natural and Applied Science, 10*(1&2); 123-127.

Aya, C. F., Eremi, E.O. & Iyamah, D.A (2025). Contributions of Agricultural Extension Services to Improve Vegetable Production in Calabar Municipality Local Government Area, Cross River State, Nigeria. Proceedings of the Annual conference of the Agricultural Extension Society of Nigeria. 30(1):249-256.

Central Bank of Nigeria CBN (2021). Statistical bulletin, Vol. 26 December, 2021 Abuja:

Central Bank of Nigeria. AGRA. (2017). Africa Agriculture Status Report: The Business of Smallholder Agriculture in Sub- Saharan Africa (Issue 5). Nairobi, Kenya: Alliance for a Green Revolution in Africa (AGRA). Issue No. 5

Cheteni, P. (2016) Youth Participation in Agriculture in the Nkonkobe District Municipality, South Africa. *Journal of Human Ecology 55*(3):207-213

Chigonda, T. (2017). Exploring Livelihood Benefits from a Community-Based Conservation Area in South-Eastern Zimbabwe. *The International Journal of Humanities & Social Studies*. 5 (9):219-228

Eremi, E. O., Aya, C. F., Azu, S. B., Beshel, D. I. and Patricia, J. R. (2026). Analysis of Off- Farm Income Generating Skill Needs of Rural Women for Poverty Reduction in Cross River State, Nigeria. *Global Nexus Journal of Multidisciplinary Research (GNJMR),* 1(1): 35-41

Eta, H.C., Aya, C. F., Iyamah, D. A. & Sunday, M. T. (2015). Perceived Effects of Rural-Urban Youth Migration on Agricultural Labor Supply in Ika Local Government Area, Akwa Ibom State, Nigeria. *International Journal of Natural and Applied Science*, 10(1&2); 128-133.

Ezeano, C.I., Ume, S.I., Okeke, C.C. & Gbughemobi, B.O. (2017) Socio Economic Determinants Factors to Youth's Participation in Broiler Production in Imo State of Nigeria. International Journal of Research and Review, 4, 136-143.

Iyamah, D.A., Aya, C. F., Eta, H. C. & Azonta, J.C (2024). Constraints to climate change adaptation by oil palm farmers in Arochukwu Local Government Area, Abia State, Nigeria. Book of Proceedings of the 1st Faculty of Agriculture International Conference, University of Calabar. 1(1): 575-581

Kwenye, J.M. & Sichone, T. (2016) Rural Youth Participation in Agriculture: Exploring the Significance and Challenges in the Control of Agricultural Sector in Zambian. RUFORUM Working Document Series (ISSN 1607-9345) 14: 473-477.

National Population Commission (NPC) (2006) Nigerian Population Census Report. National Population Commission, Abuja, 21-27.

Nyabam, V. S., Tarawali, G. & Ijie, B.A. (2018). Empirical analysis of IITA youth in agribusiness model as a panacea for solving youth unemployment problem in Nigeria. *International Journal of Governance and Development. 6* (11):146-152.

Maisule, A. M., Sennuga, S. O., Bamidele, J., Alabuja, F. O. & Osho-Lagunju, B. (2023). Rural Youth Participation in Agriculture-Based livelihood Activities in Abuja, Nigeria. International *Journal of Research and Scientific Innovation (IJRSI)*:45-62

Mthi, S., Yawa, M., Tokozwayo, S., Ikusika, O., Nyangiwe, N., Thubela, T., Tyasi, T., Washaya, S., Gxasheka, M., Mpisana, Z. and Nkohla, M. (2021). An Assessment of Youth Involvement in Agricultural Activities in Eastern Cape Province, South Africa. *Agricultural Sciences*, 12, 1034-1047.

Munishi, R. G., Mgelwa, A. S. & Guan, X. (2017). Exploring factors affecting performance of Smallholder tea farmers in Tanzania. *Journal of Economics and Sustainable Development, 8*(20):95-106.

Ogar. L. (2020). Socio-Demographic Factors and Youth Participation in Community Development Programmes in Calabar Municipality, Cross River State, Nigeria. Research on Humanities and Social Sciences. 10 (24):41-52

Olah, C.M. & Okon, E.T. (2022). Factors Affecting Pineapple Production in Central Agricultural Zone of Cross River State, Nigeria. *American Journal of Environmental and Resource Economics.* 7(1); 2022; 8-14. doi: 0.11648/j.ajere.20220701.12

Olatinwo, L.K., Fawole, B.E. & Akinyemi, M. (2017) Constraints of Rural Youth's Participation in Agricultural Development in Dutsin-Ma Local Government Area of Katsina State, Nigeria. *Journal of Agriculture and Human Ecology, 1*, 1-11

Organisation for Economic Co-operation and Development (OECD) 2017. Agricultural progress and poverty reduction Agricultural Progress and Poverty Reduction: Synthesis Report (OECD Food, Agriculture and Fisheries Working Paper No. 49).

Owolabi, J. O., Ojo, I. H. & Musa, Y. (2023). Youth Participation in Improved Agricultural Production Practices in Sabon Gari Local Government Area, Kaduna State; *Journal of Humanities. Social Science Creative. Arts, 18*(1&2): 27–36.

Tukela, B. (2019). Analysis of livelihood diversification practice to promote rural households' food security: The case of Hawassa Zuria District of Sidama Zone, Ethiopia. 11(1): 1-8.

Twumasi, M. A., Jiang, Y. & Acheampong, M. O. (2019). Determinants of agriculture participation among tertiary institution youths in Ghana. *Academic Journal of Agricultural Extension and Rural Development, 11*(3), 56-66.

Vihi, S.K., Selzing, P.M., Jesse, B. & Adeniyi, F.O. (2023). Determinants of Youth's Involvement in Arable Crop Farming in Shendam Local Government Area of Plateau State, *Nigeria. Journal of Applied Science Environment and Management. 27* (12): 2857-2864