

## Strategies for Empowering Rural Women through Enhanced Agricultural Productivity in Okene, Kogi State

<sup>1</sup>Nwakile, Toochukwu C., <sup>2</sup>Onah, Ogechukwu., <sup>3</sup>Umeh, Chinwe R., & <sup>4\*</sup>Ekwueme, Scholastica U.

<sup>1, 2&4</sup>Department of Agricultural Education, University of Nigeria, Nsukka

<sup>3</sup>Department of Agricultural Education, Federal College of Education, Okene

Corresponding Author: [uchenna.ekwueme@unn.edu.ng](mailto:uchenna.ekwueme@unn.edu.ng)

### Abstract

The study focused on strategies for empowering rural women through enhanced agricultural productivity in Okene, Kogi State. Specifically, it determined ways of: enhancing the rural women's agricultural input, marketing their farm produce; and their general welfare; as well as factors hindering empowerment and ways of removing the hinderances. It was a survey research design. Population included 2,512 registered rural women farmers and 30 registered extension agents. Questionnaire was utilized for data collection. Data was analyzed using mean and standard deviation. Findings include 10 ways ( $\bar{X} \geq 2.50$ ) for enhancing the women's agricultural input, including providing access to improved agricultural inputs including high-quality seeds ( $\bar{X} = 3.48$ ); and others. 12 ways rural women could improve the marketing of their farm produce including establishing women-led cooperatives to enhance bargaining power and access to markets ( $\bar{X} = 3.70$ ), and others. 8 ways of improving the rural women's general welfare, including expand access to affordable financial services and credit for investing in agricultural inputs ( $\bar{X} = 3.40$ ) and others. 10 factors hindering empowerment of rural women through enhanced agricultural productivity such as heavy burden of unpaid care work, including household chores and childcare services ( $\bar{X} = 3.75$ ) and nine ways of mitigating factors hindering the women's empowerment such as promoting financial inclusion with microcredit and savings for agricultural investments ( $\bar{X} = 3.86$ ). appropriate recommendations were made based on the findings.

**Keywords:** Empowerment, Rural, Women, Agriculture, Productivity, Gender, Equality, Training.

### Introduction

Agriculture plays a vital role in global economies, especially in developing nations, where it significantly impacts livelihoods (United Nations (UN), 2023). In Nigeria, agriculture is central to the economy, contributing to rural development and employment (Ajani, 2019). It encompasses various activities,

including crop cultivation, animal husbandry, and the marketing of produce (Nwakile *et al.*, 2020). Nigeria's diverse agricultural landscape reflects its rich ecological and cultural heritage (Fapohunda & Bolarinwa, 2020). The sector holds potential for inclusive growth and poverty reduction, particularly through rural development (Smith *et al.*,

2023). Investments in agriculture promote economic diversification and resilience to external shocks, furthering socioeconomic development (Achike, 2017). Gender equality and women's empowerment are increasingly recognized as essential to agricultural development, with recent research and global frameworks underscoring their importance (United Nations Development Programme Women (UNDP), 2023; Amadi & Eke, 2024).

In rural Nigeria, agriculture forms the backbone of local economies, particularly in communities dependent on crop cultivation and livestock rearing (Onah et al., 2023). While agriculture provides income and nutrition, it also shapes cultural identity in rural areas (Onyeneke, 2020). However, rural women, who are integral to agricultural production, face significant challenges that hinder their empowerment and productivity (Awosanya & Oluwakemi, 2022). These women are crucial in all stages of agricultural production, yet they encounter barriers in accessing resources like quality seeds, fertilizers, and modern equipment, which limits their productivity and income (Dauda & Lawal, 2022). Moreover, inadequate training in modern farming techniques and poor market access exacerbate their economic vulnerability (Eze & Agwu, 2023). Addressing these issues requires a multifaceted approach to improve access to resources, enhance training, and strengthen market linkages, thereby empowering rural women and fostering inclusive development (UNDP, 2023; Okonkwo & Afolami, 2023).

In Nigeria, there is a pronounced gender division of labor in agriculture, with women playing a critical role in crop cultivation, animal husbandry, and food

processing (Onyeneke, 2019). Despite their contributions, rural women face gender-based inequalities that limit their access to resources and decision-making power (Onyeneke, 2020). Factors such as patriarchal norms, limited education, and restricted land tenure rights contribute to these disparities (Adewole, 2016). Access to land, credit, and modern technologies remains a significant challenge for many rural women, impacting their ability to improve agricultural productivity and economic status (Kumar & Singh, 2022). Additionally, climate change exacerbates these challenges, as rural women often lack the resources and knowledge to adopt climate-resilient practices (UNDP, 2023). Enhancing rural women's access to markets and value chain opportunities is crucial for increasing their income and reducing economic vulnerability (Mudege, 2016).

In Okene, Kogi State, agriculture is a primary livelihood, with rural women forming a significant part of the workforce. However, these women face substantial barriers, including limited access to land, credit, and modern agricultural technologies (Ogundeji, 2019). Customary land tenure systems, which favor male heirs, leave women with insecure land rights and difficulties in securing land for cultivation (Ajani, 2019). The lack of financial resources further hinders their ability to invest in necessary agricultural inputs, perpetuating a cycle of economic vulnerability and dependence on subsistence farming (UN Women, 2022). To empower rural women in Okene, it is essential to implement strategies that enhance their agricultural productivity, tailored to the specific socio-economic and cultural context of the region (UNDP, 2023).

### **Purpose of the Study**

The study evolved strategies for empowering rural women through enhanced agricultural productivity in Okene, Kogi State. Specifically, the study determined:

1. ways of enhancing rural women's agricultural input.
2. ways the rural women could improve marketing of their farm produce.
3. ways of improving rural women's general welfare.
4. factors that hinder empowerment of rural women through enhanced agricultural productivity.
5. ways of mitigating factors hindering empowerment of rural women through enhanced agricultural productivity.

### **Methodology**

**Design of the Study:** The study adopted a survey research design.

**Area of the Study:** The study was conducted in Okene, Kogi State, Nigeria, where the Ebira people predominantly reside. Agriculture, the main economic activity, involves rural women in crop farming, livestock rearing, and small-scale agro-processing. Common crops include maize, yam, and cassava, while livestock like goats and poultry support household income. However, traditional farming methods prevail, with limited access to modern techniques, inputs, and equipment, leading to low productivity. The area lacks adequate agricultural facilities and services, and local markets, with poor infrastructure, offer limited opportunities, underscoring the need for strategies to boost productivity and empower rural women.

**Population for the Study:** The study involved 2,542 respondents, including 2,512 rural women farmers and 30

extension agents. All the women were registered with the Kogi State Ministry of Agriculture and Rural Development as of July 2023. These women, officially recognized, are actively engaged in crop cultivation, livestock rearing, and post-harvest processing. The selection of these registered farmers ensures their active participation in agriculture and access to government programs. Including extension agents, also from the Ministry, provides insights into the support and challenges faced by these women, enabling a comprehensive understanding of the factors influencing their productivity and empowerment. This targeted population allows for effective strategies to enhance agricultural productivity and empower rural women in Okene.

**Sample for the Study:** The study sample consisted of 282 respondents: 252 registered female farmers and 30 registered extension agents. The selection of 252 farmers followed Nwanna's rule of thumb (1981), which suggests using 10-20% of a population under 4,000 for sampling. A simple random sampling technique was employed to select 252 farmers. All 30 registered extension agents were included due to their manageable size.

**Instrument for Data Collection.** The study used a structured questionnaire with 49 items derived from a literature review in line with the research purposes. Five experts in Agricultural extension validated the instrument. The internal consistency of the instrument, determined using Cronbach Alpha, yielded a coefficient of 0.78. The questionnaire was divided into five clusters (I - V), each based on the specific purposes used a 4-point of very important way (VIH); important way (IW); less important way

(LIW); and not important way at all (NIWA) with weights of 4, 3, 2, and 1 respectively.

**Method of Data Collection:** A total of 282 copies of questionnaires were distributed. Only 264 valid responses (240 from rural women farmers, 24 from extension agents) copies were retrieved. This gives 93.6 per cent return rate.

**Method of Data Analysis:** Data were analyzed using mean and standard deviation, with a mean cutoff of 2.50. Items with a mean of 2.50 or higher were deemed an important way (IW), while those below 2.50 were regarded as not an important way (NIW)

## Results

**Table 1: Mean Responses and Standard Deviations on the Ways of Enhancing the Rural Women Agricultural Input**

S/N	Ways Enhancing Women's Agricultural Input	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	$\bar{X}_g$	$SD_g$	R
1	Providing access to improved agricultural inputs, such as high-quality seeds	3.50	0.80	3.40	0.60	3.48	0.77	IW
2	Offering affordable land or leasing options for farming activities	3.55	0.70	3.40	0.65	3.48	0.67	IW
3	Implementing training programs on sustainable farming practices.	3.10	1.00	3.20	1.10	3.15	1.03	IW
4	Providing financial support for agricultural startup ventures.	3.50	0.55	3.60	0.60	3.54	0.57	IW
5	Enhancing extension services.	3.60	0.50	3.50	0.60	3.56	0.56	IW
6	Implementing measures to prevent contamination of soil and water sources.	3.40	0.60	3.45	0.55	3.42	0.58	IW
7	Establishing measures to prevent transmission of zoonotic diseases.	3.35	0.75	3.25	0.65	3.30	0.70	IW
8	Enforcing environmental pollution control measures.	3.20	0.70	3.30	0.65	3.25	0.68	IW
9	Ensuring adequate security measures.	3.35	0.60	3.25	0.68	3.31	0.64	IW
10	Prioritizing government policies on land use to support and empower rural women in their agricultural activities	3.30	0.75	3.25	0.73	3.29	0.74	IW

$\bar{X}_1$  = Mean score of female famers;  $SD_1$  = Standard deviation of female farmers;  $\bar{X}_2$  = mean of extension agent/worker;  $SD_2$  = Standard deviation of extension agents/workers;  $\bar{X}_g$  = grand mean; R = Remark

Table 1 reveals that all the 10 items had grand mean values ranged 3.15 – 3.56. The values are all above 2.50 indicating that the items were important ways for enhancing the women's agricultural input in Okene, Kogi State. The standard

deviation of all the 10 items range from 0.56 – 1.03. Each of the values are below 1.96 indicating that the respondents were near to the mean and to each other in their responses.

**Table 2: Mean Responses and Standard Deviations on Ways the Rural Women Could Improve the Marketing of their Farm Produce**

S/N	Ways Rural Women Improve Marketing of their Farm Produce	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	$\bar{X}_g$	$SD_g$	R
1	Establishing women-led cooperatives to enhance bargaining power and access to markets.	3.70	0.90	3.70	0.86	3.70	0.88	IW
2	Providing training programs on post-harvest handling and packaging.	3.40	0.65	3.48	0.55	3.44	0.60	IW
3	Facilitating access to market information through digital platforms	3.30	0.70	3.24	0.66	3.27	0.68	IW
4	Supporting the establishment of local processing facilities for value addition of agricultural products	3.20	0.85	3.10	0.79	3.15	0.82	IW
5	Promoting women's participation in agricultural trade fairs.	2.80	1.10	2.66	1.08	2.73	1.09	IW
6	Developing marketing strategies tailored to rural women's agricultural products t.	3.00	1.00	3.12	0.94	3.06	0.97	IW
7	Strengthening women's capacity in negotiation skills and market-oriented business management practices.	3.40	0.80	3.28	0.86	3.34	0.83	IW
8	Facilitating access to transportation facilities to reduce post-harvest losses and ensure timely delivery of agricultural produce to markets.	3.44	0.75	3.40	0.69	3.42	0.72	IW
9	Advocating for gender-inclusive policies that address barriers to women's participation in agricultural markets	3.55	0.70	3.45	0.68	3.50	0.69	IW
10	Providing financial support or credit facilities to invest in market infrastructure.	3.50	0.70	3.54	0.64	3.52	0.67	IW
11	Offering training on quality control to meet market requirements and improve product acceptance.	3.40	0.75	3.44	0.69	3.42	0.72	IW
12	Promoting the use of technology, such as mobile applications to facilitate access to market information	3.60	0.65	3.56	0.55	3.58	0.60	IW

$\bar{X}_1$  = Mean score of female famers;  $SD_1$  = Standard deviation of female farmers;  $\bar{X}_2$  = mean of extension agent/worker;  $SD_2$  = Standard deviation of extension agents/workers;  $\bar{X}_g$  = grand mean; R = Remark

Table 2 reveals that all 12 items had mean values ranged from 2.73 – 3.70. The values of the 12 items are above 2.50 indicating that the items were important ways the rural women could improve the marketing of their farm produce in Okene.

The standard deviation of all the 12 items ranges from 0.60 – 1.09. Each of the values are below 1.96 indicating that the respondents were near to the mean and to each other in their responses.

**Table 3: Mean Responses and Standard Deviations on Ways of Improving Rural Women's General Welfare**

S/N	Ways of Improving Rural Women's General Welfare	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	$\bar{X}_g$	$SD_g$	R
1	Improve access to healthcare services.	3.54	0.79	3.20	0.98	3.42	0.88	IW
2	Enhance educational programs related to agriculture to increase skills.	3.56	0.60	3.35	0.85	3.48	0.70	IW
3	Provide better basic amenities, like clean water and sanitation.	3.68	0.60	3.59	0.70	3.64	0.64	IW
4	Expand access to affordable financial services and credit.	3.42	0.72	3.35	0.69	3.40	0.71	IW
5	Offer tailored agricultural training and extension services to boost productivity.	3.51	0.65	3.68	0.64	3.57	0.65	IW
6	Establish support networks and cooperatives focused on farmers collaboration.	3.19	0.71	3.09	1.02	3.15	0.83	IW
7	Invest in rural infrastructure, such as roads, to facilitate the transport of agricultural produce.	2.97	0.87	2.88	0.95	3.00	0.90	IW
8	Implement social protection programs that support agricultural livelihoods and reduce economic vulnerability.	3.36	0.74	3.30	0.76	3.33	0.74	IW

$\bar{X}_1$  = Mean score of female farmers;  $SD_1$  = Standard deviation of female farmers;  $\bar{X}_2$  = mean of extension agent/worker;  $SD_2$  = Standard deviation of extension agents/workers;  $\bar{X}_g$  = grand mean; R = Remark

Table 3 reveals that all eight items had mean values ranges 3.00 - 3.64. The values are higher than 2.50 indicating that the items are ways of improving the rural women's general welfare. The standard

deviation of all the eight items ranged from 0.64-0.90. Each of the values is below 1.96 indicating that the respondents were near to the mean and to each other in their responses.

**Table 4: Mean Responses and Standard Deviations on Factors Hindering Empowerment of Rural Women through Enhanced Agricultural Productivity in Okene, Kogi State**

S/N	Factors Hindering Empowerment of Rural Women	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	$\bar{X}_g$	$SD_g$	R
1	Inadequate access to land due to traditional land tenure systems.	3.90	0.20	3.94	0.22	3.92	0.21	IW
2	Deeply ingrained gender biases limit women's decision-making.	3.20	0.85	3.24	0.87	3.22	0.86	IW
3	Limited access to financial services, credit options and appropriate technologies.	3.35	0.65	3.41	0.69	3.38	0.67	IW
4	Limited access to gender-sensitive agricultural training.	3.40	0.75	3.46	0.81	3.43	0.78	IW
5	Heavy burden of unpaid care work, including household chores and childcare services.	3.70	0.60	3.80	0.62	3.75	0.61	IW

Table 4 contd.

6	Difficulty in accessing market information by women.	3.55	0.60	3.57	0.70	3.56	0.65	IW
7	Climate change-related challenges, such as droughts	3.80	0.50	3.88	0.54	3.84	0.52	IW
8	Inadequate healthcare hampers rural women's health and agricultural engagement.	3.50	1.10	3.58	1.12	3.54	1.11	IW
9	Low representation in cooperatives limits women's influence on agricultural policies.	3.90	0.25	3.92	0.31	3.91	0.28	IW
10	Lack of education restricts girls' and women's access to agricultural information and opportunities	3.78	0.50	3.82	0.56	3.80	0.53	IW

$\bar{X}_1$  = Mean score of female farmers;  $SD_1$  = Standard deviation of female farmers;  $\bar{X}_2$  = mean of extension agent/worker;  $SD_2$  = Standard deviation of extension agents/workers;  $\bar{X}_g$  = grand mean; R = Remark

Table 4 shows that all the 10 items had mean values ranges from 3.22 - 3.96. The values were above 2.50 indicating that the important ways of hindering empowerment of rural women through enhanced agricultural productivity in Okene, Kogi State. The standard deviation of all the 10 items ranges from 0.21 - 1.11. Each of the values was below 1.96 indicating that the respondents were near to the mean and to each other in their responses.

**Table 5: Mean Responses and Standard Deviations on Ways of Mitigating Factors Hindering Empowerment of Rural Women through Enhanced Agricultural Productivity**

S/ N	Ways of Mitigating Factors Hindering Empowerment	$\bar{X}_1$	$SD_1$	$\bar{X}_2$	$SD_2$	$\bar{X}_g$	$SD_g$	R
1	Securing women's land rights through land tenure reforms.	3.90	0.30	3.88	0.32	3.15	1.00	IW
2	Developing gender-sensitive agricultural training.	3.70	0.50	3.72	0.48	3.45	1.08	IW
3	Promoting financial inclusion with microcredit and savings for agricultural investments.	3.65	0.60	3.67	0.58	3.86	0.35	IW
4	Integrating gender considerations into agricultural policies to address discrimination	3.80	0.40	3.78	0.42	3.47	1.14	IW
5	Introducing time-saving and energy saving technologies like ease.	3.75	0.55	3.77	0.53	3.79	0.52	IW
6	Implement initiatives to share household and caregiving responsibilities.	3.60	0.70	3.62	0.68	3.81	0.46	IW
7	Improving infrastructure and transportation to enhance market access.	3.55	0.65	3.57	0.63	3.81	0.62	IW

8	Promoting climate change-resilient practices and technologies to help women adapt to climate change.	3.85	0.45	3.83	0.47	3.64	0.81	IW
9	Increasing access to quality healthcare.	3.50	0.75	3.52	0.73	3.88	0.39	IW

$\bar{X}_1$  = Mean score of female famers;  $SD_1$  = Standard deviation of female farmers;  $\bar{X}_2$  = mean of extension agent/worker;  $SD_2$  = Standard deviation of extension agents/workers;  $\bar{X}_g$  = grand mean; R = Remark

Table 5 shows that all the nine items had mean values ranging from 3.15 - 3.88. The values are above 2.50 indicating that the items were important ways of mitigating factors hindering the empowerment of rural women through enhanced agricultural productivity. The standard deviation of all the nine items ranges from 0.35 - 1.14. Each of the values was below 1.96 indicating that the respondents are near to the mean and to each other in their responses.

### Discussion of the Findings

The study identified several strategies to enhance women's agricultural input, including access to improved seeds, affordable land, and training in water conservation for sustainable farming. Financial support for agricultural startups and measures to prevent zoonotic diseases were also emphasized. Additionally, environmental pollution control is crucial for maintaining a healthy agricultural environment. These strategies align with Smith *et al.* (2023), who emphasized the importance of access to quality seeds and technologies for boosting women's productivity. Amadi & Eke (2024) also support offering affordable land to ensure long-term investment and food security. The findings are consistent with the Food and Agriculture Organization (2023), which stresses the need for training in climate-smart techniques.

The study also revealed ways rural women can improve the marketing of their farm produce. Establishing

cooperatives, providing training on post-harvest handling, and facilitating access to market information through digital platforms were highlighted. Supporting local processing facilities and promoting participation in agricultural trade fairs were also found to be important. These findings support Achike (2017), who highlighted women's critical role in food production. Adewole (2016) underscores the need for tailored strategies to address gender disparities, while Agwu and Eboh (2015) emphasize recognizing rural women's contributions and challenges in accessing resources.

The study highlighted strategies for improving rural women's general welfare, including better access to healthcare, educational programs, basic amenities, and financial services. These strategies aim to enhance health, skills, and economic security, thereby supporting better agricultural outcomes. The findings are aligned with Achike (2017), who emphasized women's roles in agriculture and rural development. Adewole (2016); Agwu & Eboh (2015) also stressed the importance of addressing gender disparities and recognizing rural women's contributions.

The study also identified barriers to empowering rural women in Okene, Kogi State, such as inadequate access to land, gender biases, limited financial services, and insufficient agricultural training. The heavy burden of unpaid care work and limited access to education further restrict women's opportunities. These findings



align with Mbilinyi (2018), who identified the lack of gender-sensitive training as a barrier, and Mekonen and Gebremedhin (2016), who documented the impact of unpaid care work on women's agricultural activities.

Finally, the study proposed strategies to mitigate these hindering factors. Implementing land tenure reforms, developing gender-sensitive training, promoting financial inclusion, and integrating gender considerations into policies were recommended. The introduction of time-saving technologies and improving access to healthcare were also highlighted. These strategies are supported by Njuki & Sanginga (2013), who emphasized reducing women's unpaid care work, and Quisumbing (2015), who highlighted the importance of infrastructure and climate-resilient practices for empowering women.

## Conclusion

The study identified key strategies for empowering rural women, including access to improved agricultural inputs, better marketing of produce, and enhancing general welfare. It also highlighted barriers to empowerment, such as limited land access, financial constraints, gender discrimination, and inadequate healthcare and education. These findings underscore the need for comprehensive approaches that address structural barriers and promote gender equality within the agricultural sector. By implementing the strategies and mitigating factors identified in this study, policymakers, stakeholders, and development practitioners can contribute to creating enabling environments where rural women can thrive, contribute meaningfully to agricultural development, and improve their livelihoods.

## Recommendations

Based on the findings of the study, the following recommendations were made.

1. Okene LGA authorities should provide access to improved agricultural inputs, to rural women farmers.
2. Agricultural extension services should offer targeted training programs for rural women on various area of agriculture.
3. Okene LGA authorities should invest in healthcare facilities and services in rural areas to improve the health and productivity of women.
4. Financial institutions should develop affordable microcredit programs specifically for rural women farmers.
5. Policymakers should implement land tenure reforms to secure women's land rights.

## References

- Achike, A. I. (2017). Women in agriculture and rural development: The Nigerian experience. In E. U. Igwe & C. I. Alaribe (Eds.), *Women in sustainable agriculture and food biotechnology*, 1 - 16. Springer.
- Adewole, A. T. (2016). Gender analysis of factors influencing women participation in agricultural activities in Ife Central Local Government Area of Osun State, Nigeria. *Journal of Agricultural Extension*, 20(2), 68-79.
- Agwu, N. M., & Eboh, E. C. (2015). Role of rural women in agricultural development in Nigeria. *Journal of Agricultural Extension*, 19(2), 53-65.
- Ajani, O. I. (2019). Gender roles in agricultural production and decision-making among smallholder farmers in Nigeria. *Agriculture and Human Values*, 36(4), 731-744.
- Amadi, K. C., & Eke, O. N. (2024). Sustainable livelihoods and food security among rural women farmers in Nigeria: A case study of

- Ebonyi State. *Journal of Rural Studies*, 39(2), 112-125.
- Awosanya, B. O., & Oluwakemi, O. O. (2022)., B. O., & Oluwakemi, O. O. (2022). Access to agricultural extension services and women's productivity in Ogun State, Nigeria. *Journal of Extension Education*, 28(2), 89-102.
- Bakare, O. A., & Akinpelu, O. F. (2024). Gender inequality in access to land and its implications for agricultural development in Nigeria. *Gender, Place & Culture*, 31(4), 267-280.
- Chen, L., & Zhang, M. (2023). Access to agricultural credit and its impact on rural women's empowerment: evidence from developing countries. *Journal of Development Studies*, 25(2), 189-204.
- Dauda, A. T., & Lawal, O. M. (2022). Digital agriculture and its implications for women's empowerment in Nigeria. *African Journal of Agricultural Research*, 17(6), 302-315.
- Eze, C. O., & Agwu, M. O. (2023). Effects of COVID-19 pandemic on agricultural activities and food security in Nigeria. *Journal of Agricultural Economics and Extension*, 37(4), 211-224.
- Fapohunda, R. A., & Bolarinwa, K. A. (2020). Women in agriculture in Nigeria: Role, challenges, and prospects. In M. A. Bodunrin & F. A. Olaifa (Eds.), *Women in Africa and the African Diaspora: A reader*, 143 - 162. Lexington Books.
- Food and Agriculture Organization (2023). *Climate-smart agriculture: A pathway to food security and resilience*. Rome: FAO.
- Gouëset, V. (2019). Rural women's participation in agricultural production in sub-Saharan Africa: Opportunities and challenges. *World Development*, 118, 26-41.
- Hassan, M. A., & Ajiboye, A. (2024). Role of women in sustainable agriculture: A case study of Kwara State, Nigeria. *Journal of Sustainable Development Studies*, 8(1), 56-70.
- Kumar, S., & Singh, R. (2022). Assessing the role of agricultural training programs in empowering rural women: Evidence from India. *Journal of Gender, Agriculture and Food Security*, 12(1), 45-58.
- Mbilinyi, M. (2018). Gender and development in Tanzania: Unearthing the policy processes. *Africa Today*, 64(1), 58-82.
- Mekonen, Y., & Gebremedhin, B. (2016). Gender differentials in agricultural productivity and efficiency: Empirical evidence from the Ethiopian smallholder wheat farmers. *World Development*, 83, 270-281.
- Mudege, N. N. (2016). What really matters for female farmers in sub-Saharan Africa: Evidence from cross-country surveys. *World Development*, 87, 46-61.
- Nwakile, T.C., Onah, F.C., Ekenta, L. U., Onah, O. & Aneke, A. O (2020). Farmers' perception on the use of agrochemicals in crop production in Nsukka, Enugu State. *International Journal of Multidisciplinary and Current Research*, 8, (May/ June, 2020 issue), 365 - 370. <http://ijmcr.com/farmers-perception-on-the-use-of-agrochemicals-in-crop-production-in-nsukka-enugu-state/>
- Nwanna, O. C. (1981). *Introduction to Education Research for Student Teachers*. Ibadan, Heinemann Education Book Ltd.
- Ogundeji, A. A. (2019). Gender roles in crop production and management in two Nigerian states: Implications for agricultural extension policy. *Gender, Technology and Development*, 23(2), 117-134.
- Okali, C. (2016). African women and ITCs: Investigating technology adoption and use in Uganda. *World Development*, 34(5), 876-887
- Okonkwo, C. A., & Afolami, C. A. (2023). Empowering rural women through agricultural development: A case study of smallholder farmers in Nigeria. *International Journal of Agriculture, Environment and Rural Development*, 45(2), 78-92.
- Oluwatayo, I. B. (2018). Gender, agricultural activities, and food security in Nigeria. *Journal of Asian and African Studies*, 53(3), 328-342.
- Onah, F. C., Nwakile, T. C., Nwankwo, C. U., & Ameh, H. I. (2023). Strategies for enhancing utilization of innovative crop

- production techniques by households in Kwara State. *Journal of Home Economics Research*, 30(1), 192 – 203. <https://heran.org/index.php/current-journals-for-download/>
- Onyeneke, R. U. (2019). Assessing the determinants of rural women's participation in sustainable agricultural practices in Ebonyi State, Nigeria. *Sustainability*, 11(22), 6364.
- Onyeneke, R. U. (2020). Gender-based inequalities and women's participation in rice production in Nigeria. *Journal of Rural Studies*, 76, 233-245.
- Onyeneke, R. U., & Onyeneke, E. C. (2018). Gender division of labour in agricultural production among farm households in Ebonyi State, Nigeria. *Journal of Agricultural Science*, 10(4), 130-138.
- Quisumbing, A. R. (2015). Closing the gender asset gap: Learning from value chain development in Africa and Asia. *Food Policy*, 52, 1-8.
- Quisumbing, A. R., (2014). Gender, assets, and market-oriented agriculture: Learning from high-value crop and livestock projects in Africa and Asia. *World Development*, 61, 68-86.
- Smith, J. K., Johnson, L. M., & Williams, A. B. (2023). Gender equality and women's empowerment in Nigerian agriculture: A review of recent literature. *Journal of Gender and Development*, 12(3), 45-62.
- United Nations Development Programme. (2023). *Empowering Women in Agriculture: Pathways to Gender Equality and Poverty Reduction*. United Nations Development Programme. Retrieved from <https://www.undp.org/publications/empowering-women-agriculture>
- United Nations. (2023). *The State of Food Security and Nutrition in the World 2023: Leveraging Agricultural Growth for Poverty Alleviation*. Food and Agriculture Organization of the United Nations. Retrieved from <https://www.fao.org/publications/sofi/2023>
- Wang, Y., & Li, H. (2023). Gender inequality in agricultural extension services and its impacts on rural women's empowerment: Evidence from China. *International Journal of Rural Management*, 18(3), 234-248.