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Gender Dynamics in Agricultural Development, Health Outcomes, and Decent Work Opportunities in Rural Nigeria

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ABSTRACT

This study examines the gender dynamics in agricultural development, health outcomes, and decent work opportunities in rural Nigeria, with a particular focus on Adamawa State. Using a mixed-methods approach, data were collected from 355 respondents through structured questionnaires, interviews, and case studies. Quantitative analysis employed descriptive and inferential statistics, including correlation and regression, while qualitative insights enriched the interpretation of results. Findings revealed that agricultural productivity significantly influenced decent work indicators, including income, wages, and working conditions, with agricultural yield ($\beta = 0.426$, $p < 0.001$) emerging as the most critical factor. However, access to credit, extension services, and modern inputs remained limited, constraining inclusive growth. Gender disparities were evident, as women faced restricted access to land, credit, and institutional support, despite their substantial role in agricultural labour. Environmental challenges, including droughts, floods, and conflicts, further undermined productivity and job security. The study concludes that while agricultural growth positively impacts decent work and rural welfare, achieving sustainable outcomes requires addressing gender inequality, improving institutional support, and strengthening climate resilience. It recommends integrated policies that promote gender equity, financial inclusion, and modernised farming systems to enhance productivity and create safer, fairer, and more sustainable rural employment opportunities in Nigeria.

Keywords: Agricultural Growth, Decent Work (SDG 8), Rural Households, Financial Exclusion, Gender Disparities

INTRODUCTION

Agriculture remains a central pillar of Nigeria's economy (Musa et al., 2025). It provides a primary source of livelihood for over 70% of the rural population (Food and Agriculture Organisation [FAO], 2023). Despite its importance, the agricultural sector continues to experience uneven growth (Abubakar et al., 2025), often shaped by gender-based inequalities that affect access to productive resources, income, and employment opportunities (Adeleke & Nwosu, 2022). The intersection of agricultural development, health outcomes, and decent work reflects broader social and economic structures that determine the quality of life for rural communities. Understanding how gender influences these relationships is critical for achieving inclusive and sustainable development in Nigeria's rural areas.

Gender dynamics play a crucial role in agricultural productivity and development (Muhammed et al., 2025). Women constitute nearly half of the agricultural labour force in Nigeria, yet they face systemic constraints, including limited access to land, credit, extension services, and modern technology (Okoye, Akinbile, & Yusuf, 2021). These disparities not only reduce overall productivity but also exacerbate rural poverty and vulnerability (Ahmed et al., 2025). Studies have shown that closing the gender gap in agriculture could significantly increase output and improve household welfare (World Bank, 2020). Therefore, examining gendered patterns in agricultural growth is essential to formulating policies that enhance equity and sustainability in rural economies.

Health outcomes are also intricately linked to agricultural activities and gender relations. Rural women, who often engage in subsistence farming, are exposed to occupational health risks, food insecurity, and limited access to healthcare services (Nwankwo & Ibrahim, 2022). Poor nutrition, high

maternal mortality, and exposure to environmental hazards in agricultural work further illustrate how gender and health intersect in rural contexts (Magaji & Mohammed, 2004). Improved agricultural productivity, when accompanied by gender-sensitive health and nutrition programs, can enhance well-being and resilience among rural populations (United Nations Development Programme [UNDP], 2023).

Furthermore, the concept of decent work, characterised by fair income, security, and equality of opportunity, remains a vital component of sustainable rural development (International Labour Organisation [ILO], 2021). In Nigeria, gender disparities in employment opportunities and working conditions persist (Magaji & Adamu, 2011), with rural women disproportionately engaged in informal and unpaid labour (Ogunleye & Olaniyi, 2023). This inequality limits economic empowerment and perpetuates cycles of poverty (Enaberue et al., 2024). Promoting gender equity in decent work, therefore, requires addressing structural barriers that restrict women's participation in productive and rewarding agricultural enterprises.

This study seeks to explore the gender dynamics shaping agricultural development, health outcomes, and decent work opportunities in rural Nigeria. By investigating the interconnections among these variables, the research aims to provide insights into how gender-sensitive agricultural and labour policies can improve livelihoods and promote inclusive growth. Such analysis aligns with global development agendas, including the Sustainable Development Goals (SDGs) 2, 3, 5, and 8, which emphasise zero hunger, good health, gender equality, and decent work for all (United Nations, 2020).

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

Conceptual Review

Gender Dynamics

Gender dynamics refer to the social, cultural, and economic interactions between men and women that shape roles, responsibilities, and access to opportunities within a given context (Magaji, 2002). These dynamics influence power relations, decision-making, and resource distribution in both households and communities (Kabeer, 2020). In rural economies, particularly in Nigeria, gender dynamics often determine who participates in agricultural activities, who controls productive assets, and who benefits from economic outcomes (Okoye, Akinbile, & Yusuf, 2021). The unequal power relations between men and women can limit women's access to land, credit, and extension services, thereby reinforcing gender inequality and hindering sustainable development (Adeleke & Nwosu, 2022). Understanding gender dynamics is thus essential to designing inclusive policies that promote equity and empowerment in rural development.

Agricultural Development

Agricultural development entails improving the efficiency, productivity, and sustainability of the agricultural sector through innovations, technology adoption, institutional reforms, and policy interventions (World Bank, 2020). It plays a crucial role in food security, employment creation, and poverty reduction, especially in developing countries like Nigeria, where agriculture remains the mainstay of the rural economy (Magaji & Musa, 2024). Effective agricultural development encompasses modernising farming practices (John et al., 2025), improving access to inputs (Magaji et al., 2023), and enhancing rural infrastructure to enhance livelihoods and promote inclusive growth (Ogunleye & Olaniyi, 2023). When gender-sensitive approaches are integrated, agricultural development not only increases productivity but also empowers women, leading to more equitable and resilient communities (UN Women, 2021).

Health

Health is a state of complete physical, mental, and social well-being, not merely the absence of disease or infirmity (World Health Organisation [WHO], 2021). In rural areas, health outcomes are influenced by access to quality healthcare, nutrition, sanitation, and environmental conditions (Ismail et al.,2024). Gender plays a significant role in determining health disparities, as women and men often experience different exposures and access to health resources due to biological and socio-economic factors (Nwankwo & Ibrahim, 2022). In agricultural communities, women's health is frequently affected by labour-intensive work, limited healthcare access, and nutritional deficiencies, which undermine productivity and quality of life (United Nations Development Programme [UNDP], 2023). Thus, improving health in rural areas requires a gender-responsive approach that integrates agricultural, environmental, and social dimensions.

Decent Work

Decent work, as defined by the International Labour Organisation (ILO), encompasses opportunities for productive employment that deliver fair income, workplace security, social protection, and equal treatment for all workers (ILO, 2021). It is a key component of sustainable development and poverty reduction, promoting human dignity and economic inclusion (Ologbonori et al., 2025). In Nigeria's rural economy, many workers, especially women, are engaged in informal, low-paid agricultural labour without adequate protection or social benefits (Ogunleye & Olaniyi, 2023). Gender disparities in access to decent work often reflect systemic inequalities in education, ownership of productive assets, and participation in decision-making (Adeleke & Nwosu, 2022). Ensuring decent work for both men and women in rural areas is therefore essential for achieving inclusive economic growth and advancing the Sustainable Development Goals (United Nations, 2020).

Theoretical Framework

Gender and Development (GAD) Theory

The Gender and Development (GAD) theory provides a relevant framework for analysing the interconnections between gender dynamics, agricultural development, health outcomes, and decent work in rural Nigeria. The GAD approach emerged in the 1980s as an evolution of the earlier Women in Development (WID) framework, shifting the focus from women's inclusion alone to the social relations between men and women and how these influence access to resources, opportunities, and decision-making power (Moser, 1993). The theory emphasises that gender inequalities are socially constructed rather than biologically determined and can therefore be transformed through equitable policies and institutional reforms (Kabeer, 2020). Within the context of rural Nigeria, GAD theory highlights how structural barriers, such as unequal land ownership, limited access to agricultural inputs, and gendered labour divisions, affect women's participation in productive agriculture and their access to decent work. It also underscores the need for gender-sensitive agricultural and health interventions that promote empowerment, equity, and sustainable rural livelihoods (Cornwall & Rivas, 2015). Thus, the GAD framework is instrumental in guiding this study toward understanding and addressing the systemic gender imbalances that influence development outcomes in rural communities.

Empirical Review

Abraham (2025) investigated how agricultural productivity influences rural employment patterns in northern Nigeria, with specific attention to Adamawa State. Using a time-series econometric approach covering 2000–2023, the study analysed the relationship between agricultural output and rural labour engagement. The results revealed a significant positive association between improvements in crop yields and rural employment, primarily within staple crop value chains such as maize, sorghum, and rice. Despite this, Abraham (2025) identified critical structural constraints, including poor mechanisation, inefficient markets, and weak agro-processing capacity, which limit employment potential. The study concluded that agricultural growth alone cannot guarantee decent work without complementary investments in mechanisation, value addition, and labour protection policies. It therefore advocated integrated rural development strategies that link agricultural productivity with enterprise growth and youth employment.

Similarly, Aremu (2024) analysed the interrelationship between farm size, mechanisation, and decent work opportunities among rural farming households in Adamawa and Taraba States. Drawing on data from 500 farm households and applying multivariate regression techniques, the study found that larger farms and moderate levels of mechanisation are associated with higher labour demand, higher wages, and more stable employment outcomes. However, Aremu (2024) cautioned that excessive mechanisation without corresponding skill development could displace unskilled workers and intensify rural unemployment. The study's main contribution lies in underscoring the balance between technological innovation and inclusive job creation, consistent with Sustainable Development Goal (SDG) 8 on promoting productive employment and decent work. Consequently, the study recommended promoting appropriate mechanisation technologies while integrating vocational and technical training to enhance rural workers' adaptability and resilience.

Mohammed (2025) explored the role of livelihood diversification among rural women farmers in northeastern Nigeria, focusing on Adamawa State. Using qualitative interviews and focus group discussions with 220 women farmers, the study examined how women's agricultural participation intersects with employment and income generation. The findings indicated that women depend largely on small-scale farming, agro-processing, and informal trading to sustain their livelihoods. Nevertheless, structural gender barriers such as unequal access to land, credit, and decision-making limit their capacity to scale up or transition into formal employment structures.

Mohammed (2025) argued that most rural development programs fail because they neglect the specific challenges faced by women despite their central role in the agricultural economy. The study recommended implementing gender-responsive agricultural policies, improving women's access to productive resources, and strengthening women-led cooperatives to advance SDG 8 objectives in rural regions.

In a related study, Chigbu (2023) examined the integration of decent work principles into agricultural policy to enhance labour standards in rural Nigeria, focusing on Adamawa State. Using a qualitative policy analysis based on interviews with policymakers, agricultural officers, and rural workers, the study found that most agricultural policies prioritise productivity over labour welfare. As a result, rural workers often face low wages, poor job security, and unsafe working conditions when applying a decent work perspective.

Chigbu (2023) demonstrated that robust labour rights frameworks must complement agricultural expansion to ensure sustainable rural livelihoods. The study called for the introduction of rural labour standards, expanded social protection for agricultural workers, and better alignment of agricultural strategies with SDG 8 to promote inclusive and equitable development.

Furthermore, the IIARD (2025) policy report analysed the link between agricultural sector growth and unemployment trends in Nigeria from 1995 to 2022, with a particular focus on Adamawa State. Using a time-series econometric model, the report found that agricultural growth significantly reduces rural unemployment, especially when integrated with value-added and processing industries. However, it also observed that such growth often leads to temporary employment rather than sustainable, decent work due to informality and poor labour conditions. The report concluded that to transform agricultural expansion into lasting employment, institutional reforms are necessary to formalise rural jobs, strengthen agribusiness entrepreneurship, and provide adequate social protection for workers. These measures, according to the IIARD (2025), would ensure that agricultural growth supports decent work and aligns effectively with SDG 8.

Research Method

Research Design

The study adopted a mixed-methods research design combining quantitative and qualitative approaches to provide a comprehensive understanding of the relationships among gender dynamics, agricultural development, health outcomes, and decent work opportunities in rural Nigeria. The quantitative component involved a cross-sectional survey of rural households engaged in agricultural activities to generate representative data on gender participation, agricultural productivity, health indicators, and work conditions. The data were analysed statistically to identify existing relationships and patterns. The qualitative component consisted of semi-structured interviews and case studies to gain deeper insights into the experiences, perceptions, and challenges faced by men and women in the agricultural sector. This approach enabled triangulation and ensured the findings were contextually grounded, reliable, and valid. A sequential explanatory design was employed, in which quantitative data were collected and analysed first, followed by qualitative data collection to further explain and elaborate on the quantitative findings (Creswell & Plano Clark, 2018).

Population and Sampling Techniques

The study population comprised rural households actively involved in agricultural production within selected local government areas (LGAs) in Nigeria. These LGAs were chosen to capture the diversity of agro-ecological zones, gender participation, and socio-economic variations across rural communities. Selection criteria included the prevalence of agricultural activity, crop and livestock production diversity,

and accessibility for fieldwork. According to the National Population Commission (2023), a large proportion of Nigeria's rural population depends on agriculture for livelihood, with significant gender-based participation patterns. A multi-stage stratified random sampling method was used for the quantitative survey to ensure representation across gender, age, and occupational categories. The LGAs were divided into rural communities based on population density and agricultural engagement, and random samples of communities and households were then selected. Sample size was determined using a statistical power analysis to ensure adequate representation. For the qualitative component, purposive sampling was used to select key informants, including farmers, agricultural labourers, health workers, community leaders, extension officers, and government representatives. This ensured the inclusion of diverse perspectives on gender roles, health, and decent work in rural agriculture (Etikan, Musa, & Alkassim, 2016).

Data Collection Methods

This study utilised both quantitative and qualitative data collection techniques to ensure comprehensive and reliable results.

Survey Design and Administration

A structured questionnaire was developed to gather quantitative data from rural households. The questionnaire covered key areas including demographic and socio-economic characteristics, agricultural practices, access to inputs and credit, health and nutrition status, working conditions, social protection, and gender roles in agricultural labour. The instrument was pre-tested through a pilot study to ensure clarity, validity, and reliability. Data collection was conducted through face-to-face interviews by trained enumerators using the local language to enhance understanding and accuracy.

Qualitative Data Collection

The qualitative data collection involved semi-structured interviews and case studies designed to capture the lived experiences and perceptions of rural dwellers regarding gender participation in agriculture, health outcomes, and decent work.

Semi-structured Interviews

Semi-structured interviews were conducted with key stakeholders, including male and female farmers, agricultural labourers, community leaders, health practitioners, and representatives of non-governmental and community-based organisations. The interviews explored issues such as access to agricultural resources, gender-specific challenges, health implications of agricultural work, and conditions affecting decent employment. All interviews were recorded with participants' consent and transcribed for analysis.

Case Study Selection and Procedures

Case studies were used to provide in-depth analysis of selected agricultural development programs and their gender-related implications for health and decent work in rural communities. Selection criteria included program relevance, diversity of agricultural practices, and geographical representation. Data were gathered through document reviews, site visits, and interviews with project beneficiaries and stakeholders. Field observations, notes, and photographs were used to complement the interview data.

Data Analysis Techniques

Quantitative Data Analysis

Quantitative data obtained from the survey were analysed using statistical software such as SPSS and Stata. Descriptive statistics, including means, frequencies, percentages, and standard deviations, were computed to summarise demographic and socio-economic characteristics of respondents. Correlation analysis was used to determine the strength and direction of relationships among agricultural productivity, gender participation, health, and decent work indicators. Multiple regression analysis was used to estimate the effect of agricultural development and gender dynamics on health and decent work while controlling for variables such as education, household size, and access to infrastructure. ANOVA and t-tests were conducted to examine differences across gender and occupational groups. At the same time, Structural

Equation Modelling (SEM) was used to assess the direct and indirect effects of gender dynamics on agricultural development, health, and work outcomes (Kline, 2015).

Qualitative Data Analysis

Qualitative data were analysed using thematic analysis. Transcribed interviews and case study data were systematically coded to identify recurring patterns and themes related to gender participation, agricultural productivity, health implications, and employment opportunities. The emerging themes were organised and interpreted in line with the study objectives and theoretical framework. Triangulation of quantitative and qualitative findings enhanced the validity, reliability, and comprehensiveness of the study outcomes (Braun & Clarke, 2019).

RESULTS AND DISCUSSION

Socio-Demographic Characteristics of Respondents

Table 4.1: Socio-Demographic Characteristics of Respondents (N = 355)

Variable	Category	Frequency	Percentage (%)
Sex	Male	209	58.9
	Female	146	41.1
Age	Below 30 years	72	20.3
	30–39 years	115	32.4
	40–49 years	101	28.5
	50 years and above	67	18.9
Education	None	84	23.7
	Primary	107	30.1
	Secondary	111	31.3
	Tertiary	53	14.9
Household Size	1–5	94	26.5
	6–10	176	49.6
	11 and above	85	23.9

Source: Field Survey, 2025

The demographic characteristics indicate that men accounted for 58.9% of respondents, while women accounted for 41.1%, highlighting male dominance in rural agricultural activities and decision-making. The age distribution shows that most respondents were aged 30–49, representing the active working population involved in farming. Educational attainment was generally low, with only 14.9% having a tertiary education, reflecting limited access to formal education in rural communities. Household sizes were relatively large, with 49.6% reporting 6-10 members, suggesting high dependency ratios that may strain household income and health resources. These patterns reflect the socio-economic and demographic realities influencing gender participation and the attainment of decent work in Nigeria's rural agricultural sector.

Agricultural Practices and Productivity

Table 4.2: Agricultural Practices and Productivity

Variable	Category	Frequency	Percentage (%)
Main Crops Cultivated	Maize	167	47.0
	Rice	103	29.0
	Groundnut	52	14.6
	Others (Millet, Sorghum, Vegetables)	33	9.4
Livestock Rearing	Yes	211	59.4
	No	144	40.6

Variable	Category	Frequency	Percentage (%)
Farming Methods	Traditional	148	41.7
	Modern	79	22.3
	Both	128	36.0
Use of Inputs	Improved Seeds	195	54.9
	Fertilizers	233	65.6
	Pesticides	178	50.1
	Irrigation	69	19.4
	Mechanisation	48	13.5
Crop Loss in the Last 12 Months	Yes	263	74.1
	No	92	25.9

Source: Field Survey, 2025

The findings revealed that maize (47.0%) and rice (29.0%) were the dominant crops, indicating dependence on staple food production, while other crops, such as groundnut and sorghum, were less common. Livestock rearing (59.4%) complemented crop farming, contributing to diversified livelihoods. A large share of respondents (41.7%) practised traditional farming, while 22.3% used modern methods and 36.0% employed both traditional and modern methods, indicating a gradual transition toward modern agriculture. Fertiliser use (65.6%) was more common than mechanisation (13.5%) and irrigation (19.4%), reflecting limited access to modern agricultural technologies. The high rate of crop loss (74.1%) due to drought, pests, flooding, and lack of inputs underscores persistent productivity challenges that directly affect income stability and decent work opportunities in rural areas.

Access to Agricultural Inputs, Credit, and Markets

Table 4.3: Access to Inputs, Credit, and Markets

Variable	Category	Frequency	Percentage (%)
Source of Inputs	Own Purchase	188	52.9
	Government Support	69	19.4
	Cooperatives	64	18.0
	Others	34	9.7
Access to Credit	Yes	102	28.7
	No	253	71.3
Market Distance	1–5 km	127	35.8
	6–10 km	148	41.7
	Above 10 km	80	22.5
Membership in Cooperative	Yes	118	33.2
	No	237	66.8
Extension Services	Yes	143	40.3
	No	212	59.7

Source: Field Survey, 2025

The results indicate that most farmers sourced inputs through personal purchase (52.9%), showing a lack of institutional or cooperative support. Only 28.7% had access to credit, reflecting significant financial exclusion that limits investments in productivity-enhancing technologies. A majority (41.7%) of farmers travelled 6–10 km to access markets, indicating logistical challenges that reduce profit margins and increase post-harvest losses. Limited cooperative membership (33.2%) and poor access to extension services (40.3%) further restricted farmers' exposure to innovation and best practices. These constraints collectively hindered agricultural productivity, reduced earnings, and limited access to decent and sustainable employment in rural communities.

Decent Work Indicators

Table 4.4: Employment and Working Conditions

Variable	Category	Frequency	Percentage (%)
Employ Labourers	Yes	139	39.2
	No	216	60.8
Average Daily Wage	₦500–₦1000	84	60.4
	₦1001–₦2000	37	26.6
	Above ₦2000	18	13.0
Average Working Hours	Below 6 hrs	29	20.9
	6–8 hrs	81	58.3
	Above 8 hrs	29	20.9
Social Protection for Labourers	Yes	42	30.2
	No	97	69.8
Fair Wage (Labourers' Perception)	Yes	71	51.1
	No	68	48.9
Safe Working Conditions	Yes	76	54.7
	No	63	45.3

Source: Field Survey, 2025

The data revealed that only 39.2% of farmers employed external labour, reflecting limited job creation within the sector. Labourers earned relatively low wages: 60.4% received between ₦500 and ₦1000 daily, indicating underpayment and economic vulnerability. Although 58.3% worked 6–8 hours daily, most lacked social protection (69.8%), leaving them exposed to occupational risks. Slightly over half (54.7%) reported safe working conditions, while 48.9% expressed dissatisfaction with wage fairness. These findings demonstrate that decent work deficits persist in rural agriculture, characterised by informality, low income, limited job security, and inadequate labour protection mechanisms.

Relationship between Agricultural Growth and Decent Work

Table 4.5: Correlation Analysis between Agricultural Productivity and Decent Work

Variable	Income	Wages	Working Conditions
Agricultural Yield	0.482**	0.395**	0.311*

*Note: **p < 0.01; *p < 0.05. Source: SPSS Output, 2025*

The correlation results indicated a strong positive and significant relationship between agricultural productivity and decent work indicators. Higher agricultural yields were associated with higher income (r = 0.482) and better wages (r = 0.395), confirming that productivity growth enhances household welfare and employment quality. The positive correlation with working conditions (r = 0.311) suggests that as productivity improves, farmworkers experience modest improvements in safety and stability. These results affirm that agricultural growth serves as a key driver of income generation and rural employment, though its impact on workplace safety and welfare remains moderate.

Table 4.6: Regression Analysis of Agricultural Growth on Decent Work Indicators

Dependent Variable (Decent Work Index)	β	t-value	Sig.
Agricultural Yield	0.426	6.782	0.000
Access to Inputs	0.312	4.911	0.000
Access to Credit	0.185	2.945	0.004
Extension Services	0.161	2.313	0.021

$R^2 = 0.47$, $F(4, 350) = 76.21$, $p < 0.001$

Source: SPSS Output, 2025

Regression results showed that agricultural yield had the most decisive influence on decent work outcomes ($\beta = 0.426$, $p < 0.001$), indicating that higher productivity directly enhances income and labour standards. Access to inputs ($\beta = 0.312$, $p < 0.001$) and credit ($\beta = 0.185$, $p = 0.004$) also significantly contributed to decent work, emphasising the importance of resource accessibility and financial inclusion. Extension services ($\beta = 0.161$, $p = 0.021$) further supported decent employment outcomes by improving farmers' knowledge and productivity. The model explained 47% of the variation in decent work, confirming the significant role of agricultural development and institutional support in promoting better labour conditions and rural livelihoods.

Qualitative Findings (Interviews and Case Studies)

The qualitative findings highlighted widespread informality, weak labour protection, and gender disparities in agricultural employment. Many rural workers lacked written contracts and received irregular wages, leaving them vulnerable to exploitation. Women faced additional barriers such as restricted land ownership, limited access to credit, and exclusion from extension programs, which reinforced gender inequality and constrained their economic empowerment. Environmental challenges like droughts, floods, and conflicts further disrupted livelihoods, while institutional weaknesses, including corruption and poor coordination, limited the effectiveness of government support initiatives. Participants emphasised the need for equitable access to resources, gender-sensitive agricultural policies, and improved social protection frameworks to promote fair and decent employment in rural areas.

Discussion of Findings

The results demonstrated that agricultural development positively influenced income, wages, and working conditions, aligning with Sustainable Development Goal 8, which advocates for decent work and inclusive economic growth. However, persistent barriers, such as financial exclusion, low mechanisation, and weak institutional support, limit the realisation of these gains. The findings also underscore that women remain disproportionately disadvantaged due to systemic inequalities in resource access and participation. Environmental shocks and policy inefficiencies further exacerbate these challenges. Addressing these issues through integrated policies that promote gender equity, strengthen institutional frameworks, and support agricultural innovation is critical to achieving sustainable development and decent work for all in Nigeria's rural communities.

Conclusion and Recommendations

The findings of this study demonstrated that agricultural growth plays a vital role in improving income levels, wages, and working conditions in rural Nigeria, particularly in Adamawa State. Increased agricultural productivity was shown to enhance economic inclusion and promote decent work opportunities, aligning with the objectives of Sustainable Development Goal 8. However, the persistence of gender inequality, weak institutional support, poor access to credit, and limited adoption of modern farming technologies continue to hinder progress. Despite their active participation in agriculture, women remain marginalised in land ownership, decision-making, and access to productive resources. Furthermore, environmental shocks such as droughts, floods, and conflicts exacerbate rural poverty and reduce job stability, highlighting the vulnerability of rural livelihoods to both structural and climatic challenges.

Based on these findings, the study recommends that government and development stakeholders strengthen institutional frameworks to improve access to agricultural credit, inputs, and extension services, particularly for women farmers. Policies should prioritise gender-responsive agricultural programs that promote equal opportunities in resource ownership, education, and decision-making. Additionally, investment in modern farming technologies, irrigation systems, and climate-resilient practices is essential to boost productivity and safeguard employment. Efforts should also focus on enforcing labour protection laws, providing social safety nets for agricultural workers, and encouraging cooperative membership to enhance collective bargaining and market access. These strategies will contribute to more inclusive, equitable, and sustainable agricultural and labour development in rural Nigeria.

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