



Michael Okpara University of Agriculture, Umudike, Nigeria

**College of Agricultural Economics,
Rural Sociology & Extension**

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BOOK OF ABSTRACTS

1. Influence of Agency Banking on Banking Habits among Rural Population in Akwa Ibom State, Nigeria

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Abstract

This study examines the influence of agency banking on banking habit among rural population in Akwa Ibom State, Nigeria. The specific objectives are to; assess the socio-economic characteristics of respondent, determine the level of use of financial services by rural populace with and without bank agents and factors that influence the banking habit of the rural populace. A multi-stage sampling technique was adopted in selecting a sample size of 243 respondents while two sets of structured questionnaire were used to elicit data from respondents. Data analysis was done using mean, frequency table, percentages, multiple regression and Z-test. The result shows that majority of the respondents 65.02% were males; mean age of 40years; 39.09% were farmers; 64.6% were married; 51.85% have secondary education and have mean annual income of N469,135.00. The Z-test result shows a statistical significant difference exist in the level of usage of banking services on the basis of with and without banking agents and Multiple regression result shows that banking habit was influenced by bank agency presence ($p < 0.01$), (9.81) Distance ($-p < 0.01$), Income ($p < 0.01$), Educational level ($p < 0.01$), Cost of banking ($p < 0.01$), and Security ($p < 0.01$). This study recommended that the socioeconomic variables of the people should be considered in designing and review of policy on improving banking habit, agency banking model should be encouraged as instrument of positive change in banking behaviour of rural people. The significant factors that influenced banking habit such as agency presence, distance, income, educational level, cost of banking and security should be considered in policy issues.

Keywords: Agency, banking, habit, Rural and population

2. Contributions of Rice Entrepreneurship to the Sustainable Livelihood of Rice Farmers in North-Eastern Nigeria

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Abstract

This study assessed the contributions of rice entrepreneurship to sustainable livelihood of rice farmers in North-eastern States, Nigeria. Primary data were collected using well-structured questionnaire administered to 320 rice farmers. A multi-stage sampling procedure was used to select farmers. Data were analysed using percentages, mean, standard deviation and varimax rotated factor analysis. The findings revealed that farmers were greatly involved in rice cultivation (100%), rice processing (50.6%), marketing of paddy (65.9%) and milled rice (51.3%) to a little extent. Results further showed that financial asset, physical and natural assets were the topmost assets accrued by farmers as a result of their participation in rice entrepreneurial activities. The leading constraints to rice entrepreneurship were inadequate access to capital (mean=3.83), lack of access to agricultural extension agents (mean=3.63) and climatic risks (mean=3.57). The study conclude that rice farmers highly participated in rice cultivation, processing and marketing which contributed highly to financial assets of the farmers. This study recommended agricultural extension services to further strengthen the capacity of farmers to adequately access credit and climate-smart farming in the study area.

Keywords: rice, farmers, entrepreneurship, livelihood

3. Effect of Adoption of Climate-Smart Agricultural Practices on Food Security Status of Yam Agripreneurs in Abia State, Nigeria

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Abstract

This study assessed the effect of adoption of Climate-smart Agricultural Practices on Food Security status of yam agripreneurs in Abia State, Nigeria with a focus on demographic characteristics of yam agripreneurs, and the climate-smart agricultural practices adopted in the study. A multistage sampling procedure was used to select the respondents for the study, while primary data were collected through the use of structured questionnaires. Data collected were analyzed using descriptive statistics, and as well inferential statistical. The findings revealed that the majority of the respondents (65.6%) were male, (32.5%) married, and within the economically active age group 37. Most of the respondents had formal education and depended mainly on farming as their primary occupation (52.1%). The result also show that mean score of 2.41 indicated that respondents were generally at the evaluation stage of adopting climate-smart agricultural practices. This implies that most yam agripreneurs were aware of the practices and had shown interest in them. The finding suggested moderate progress in the diffusion of climate-smart agricultural technologies. The study revealed that adoption of climate-smart agricultural practices contributed positively to improved food security among the respondents. The OLS regression result showed that socioeconomic characteristics had weak influence on the adoption of climate-smart agricultural practices, although age significantly influenced adoption in the linear model, indicating that younger farmers were more willing to adopt climate-smart practices than older farmers. The double-log function was selected as the lead equation based on its higher coefficient of determination and F-ratio values. The study concluded that climate-smart agripreneurship practices have great potential for improving yam productivity and food security in Abia State if adequate institutional and policy support is provided. Improved access to credit facilities, strengthened agricultural extension services, subsidized farm inputs, farmer education, and increased government support to encourage wider adoption of climate-smart agricultural practices among yam agripreneurs.

Keywords: Adoption, Climate-smart Agriculture, Food Security, Agripreneurs

4. Green Growth, Natural Resource Management and Environmental Protection in Kaduna State

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Abstract

The twin crises of environmental degradation and economic under-development represent the defining challenge of the twenty-first century. Green growth a development paradigm that decouples economic expansion from natural resource depletion and environmental harm has gained significant global traction as a transformative response to these intertwined crises. This seminar paper examines the conceptual foundations, empirical evidence, and policy implications of green growth in the context of natural resource management (NRM) and environmental protection, with particular reference to sub-Saharan Africa and Nigeria. A systematic review of peer-reviewed literature, multilateral policy frameworks, and empirical case studies published between 2020 and 2026 was adopted as the primary methodology. Results reveal that green growth strategies including circular economy models, payments for ecosystem services, sustainable land management, and renewable energy transitions have yielded measurable environmental and economic co-benefits across multiple national contexts. However, realization of green growth in developing nations remains constrained by governance gaps, inadequate financing, and limited institutional capacity. The paper concludes that integrating green growth principles into Nigeria's development planning, particularly in resource-rich and ecologically fragile regions such as Kaduna State, is both feasible and urgently necessary. Recommendations are advanced for policy coherence, community engagement, education, and green financing mechanisms.

Keywords: Green growth, natural resource management, environmental protection

5. Gender Dynamics and Women's Roles in Small-Scale Oil Palm Processing: Implications for Smart Agricultural Production, Green Growth and Sustainable Development in Isi-Uzo, Enugu State, Nigeria

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Abstract

The oil palm sub-sector holds immense potential for Nigeria's economic diversification, rural livelihoods, and green growth. However, small-scale processing remains largely traditional, labor-intensive, and gendered, limiting productivity, efficiency, and environmental sustainability. This study examined gender issues and the division of labor in small-scale oil palm fruit processing in Isi-Uzo Local Government Area of Enugu State, Nigeria. Primary data were collected from 96 respondents using a multistage sampling technique. Descriptive statistics, mean score analysis, and Ordinary Least Squares (OLS) regression were employed for data analysis. Results revealed distinct gender roles: males were more involved in splitting (2.56), digesting (2.42), and pressing of oil (2.71), while females dominated picking (2.85), winnowing (2.85), fetching water (2.50), boiling (2.67), clarification (2.58), and sorting (2.63). Women performed more overall roles than men. The exponential functional form (lead equation) showed that age, educational level, household size, processing experience, and regularity of extension contact significantly influenced the number of roles played by women ($R^2 = 0.861$). The study concludes that addressing gender disparities through targeted education, extension services, and inclusive access to climate-smart technologies is essential for enhancing productivity, reducing drudgery, and promoting sustainable and inclusive green growth in Nigeria's oil palm sector. Recommendations include strengthening gender-responsive extension on modern processing technologies and improving women's access to credit and cooperatives under frameworks such as the National Initiatives for Sustainable Climate-Smart Oil Palm Smallholders (NISCOPS).

Keywords: Gender roles, small-scale oil palm processing, climate-smart agriculture, green growth, sustainable development, women empowerment, Enugu State

6. Socio-Economic Contribution of Goat Marketing to Food Security Status of Marketers in Oyo State, Nigeria

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Abstract

Goat marketing plays an important role in rural livelihoods by generating income, improving nutrition, and supporting household welfare. This study examined the socio-economic contribution of goat marketing to food security status of marketers in Oyo State, Nigeria. Specifically, the study described the socio-economic characteristics of goat marketers, assessed the contribution of goat marketing to food security, examined their food security status, and identified the major challenges confronting marketers in the study area. A multi-stage sampling procedure was used to select 372 goat marketers from 12 major livestock markets across the four ADP zones of the state. Primary data were collected through structured questionnaires and analyzed using descriptive statistics, the food security index, and logit regression analysis. Results showed that 87.4% of respondents were male, with a mean age of 44.1 years; 72.3% were married, and the average household size was six persons. Goat marketing generated an average monthly income of ₦241,000, while 90.6% of respondents engaged in the trade mainly for income generation. Food security analysis revealed that 69% of households were food secure, whereas 31% were food insecure. Logit regression results indicated that household size ($p < 0.01$), monthly income ($p < 0.05$), cooperative membership ($p < 0.01$), marital status ($p < 0.10$), and occupation ($p < 0.05$) significantly influenced food security status. Major constraints included high feed costs, disease outbreaks, limited credit access, and inadequate veterinary services. The study recommends improved access to credit, stronger cooperatives, enhanced veterinary services, and affordable feed alternatives.

Keywords: Goat production; Goat marketing; Food security; Farmers; Constraints

7. A Review of Adaptive Farming Strategies for Climate Variability as Pathways for Sustainable Agriculture and Food Security in Nigeria

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Abstract

This review examines the adaptive farming strategies for climate variability as pathways for sustainable agriculture and food security in Nigeria. Climate variability has become one of the most significant threats to agricultural productivity, rural livelihoods, and food security in Nigeria. Changes in rainfall patterns, increasing temperatures, droughts, floods, and the prevalence of pests and diseases continue to undermine agricultural performance and the sustainability of farming systems. This review examines adaptive farming strategies as pathways for promoting sustainable agriculture and enhancing food security in Nigeria. The paper synthesizes empirical and theoretical literature on climate variability, sustainable agriculture, and climate-smart adaptation practices adopted by Nigerian farmers. It discusses adaptation strategies including crop diversification, improved crop varieties, conservation agriculture, integrated soil fertility management, agroforestry, irrigation, water harvesting, integrated pest management, livestock diversification, digital climate information services, and institutional support mechanisms. The review further examines the challenges limiting the adoption of adaptive farming practices, including inadequate access to finance, poor extension services, limited technological innovations, weak policy implementation, land tenure insecurity, and inadequate climate information. The paper concludes that strengthening adaptive farming strategies through supportive government policies, increased agricultural investments, research, extension delivery, climate-resilient infrastructure, and farmer education will significantly improve agricultural resilience, environmental sustainability, and national food security. Sustainable adaptation requires coordinated efforts among government institutions, research organizations, development partners, private sector actors, and farming communities to build resilient agricultural systems capable of withstanding future climate uncertainties.

Keywords: Climate variability, adaptive farming, sustainable agriculture, food security, climate-smart agriculture

8. Empowering Youth and Women in Agriculture in Ekiti State, Nigeria

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Abstract

Youth and women constitute a significant proportion of the agricultural workforce in Ekiti State, Nigeria. Despite their contribution, structural and institutional barriers limit productivity and economic participation. This study examined the socio-economic characteristics, access to productive resources, and challenges affecting youth and women farmers across 16 Local Government Areas (LGAs) in Ekiti State. Data were collected from 160 respondents (80 youth and 80 women) using structured questionnaires and analyzed with descriptive statistics. The findings revealed that 68% of the youth were within the modal class of 26-35 years of age and 45% of the women were within the modal class of 46-55 years of age. Most of the youth (48%) had secondary education and most of the women (38%) had primary education. They had limited access to land (48% of youth and 30% of women), credit (33% of youth and 18% of women), extension services (45% of youth and 33% of women) and farm inputs (43% of youth and 28% of women) especially among the women. Most of the farmers also experienced climate challenges (74% of youth and 80% of women) due to lack of climate adaptation tools. It was recommended that youth agribusiness incubation centers should be established in strategic zones and climate-smart agriculture should be promoted among youth and women in Ekiti State.

Keywords: Youth, women, agriculture, Ekiti State, gender inclusion

9. Effect Of Participation in IITA Cassava Weed Management Project Technologies on Farm Output of Farmers in Abia State, Nigeria

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Abstract

This study analyzed effect of participation in IITA cassava weed management project technologies on farm output of farmers in Abia State, Nigeria. Proportionate sampling technique was used to select one hundred and fifty-four (154) cassava farmers. Data were collected using a structured questionnaire and results analyzed with descriptive statistics such as frequency counts, mean scores and percentages, and Z-test analyses. Result revealed that farmers had high participation in site selection ($\bar{x}=3.50$), land clearing ($\bar{x}=3.25$), replacement of dead or non-sprouted cuttings and harvesting and selling or processing of cassava roots with mean rating of 3.0 each. The participating farmers also recorded high participation in sourcing of cassava planting materials and application of post-emergence herbicide with mean scores of 2.80 each, pre-planting herbicide application, tillage operations and application of pre-emergence herbicide with mean ratings of 2.7 each, in fertilizer application ($\bar{x}=2.52$) with grand mean participation score of 2.9. The mean cassava output of participating farmers were 40,624.183kg/ha (before) and 76,755.56kg/ha (after) participation in the project. Z-test analysis result also showed that there was a significant difference in the output of farmers before and after participating in the project at 1.0% alpha level. The study concluded that farmers had high participation in the project which increased their cassava output. This study therefore recommended that policies aimed at increasing investment in agricultural extension delivery, access to farm inputs, and rural infrastructure that will support farmers' participation in cassava production.

Keywords: Participation, IITA, Project, Cassava, Output

10. Effects of Multidimensional Risk Exposure on the Productivity of Cassava-Based Farmers in Southwest Nigeria

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Abstract

Cassava production in Southwest Nigeria is characterized by exposure to multiple and interrelated risks that can adversely hampered productivity and livelihoods. This study assessed the effects of multidimensional risk exposure on the productivity of cassava-based farmers in Ogun and Oyo States, Southwest, Nigeria. Primary data were collected from 355 farmers through a multistage sampling procedure. A Multidimensional Risk Index (MRI) was constructed to capture risk exposure across five dimensions: credit, production, post-harvest, marketing, and pricing risks. Descriptive statistics were used to identify the prevalence of risk types and productivity distribution, while a multiple regression model was employed to estimate the effect of risk exposure, and risk management strategies on productivity. Results revealed that inflation/currency devaluation (63.1%), low crop yield (87.6%), unavailability of buyers (73.52%), high transport cost (65.07%) and poor business management (50.99%) were the most significant credit, production, post-harvest, marketing and pricing risks faced by the cassava farmers. The pooled MRI (0.517) and headcount ratio (0.942) reveal high and pervasive multidimensional risk exposure among farmers. Mean productivity was 0.979, indicating overall sub-optimal performance. Regression estimates show that multidimensional risk exposure significantly reduces productivity, whereas education, farm size, access to credit, and extension contact, off-taker contracts and farm insurance were found to enhance productivity. The study concludes that multidimensional risk exposure constitutes a major constraint to cassava productivity and recommends strengthening risk management mechanisms, improving farmers' access to credit and extension services, and enhancing market linkages to improve resilience and productivity.

Keywords: productivity, cassava-based, multidimensional risk, management strategies, Nigeria

11. Socio-Economic Factors Influencing the Choice of Climate Change Adaptation Strategies of Smallholder Pig Farmers in Imo State, Nigeria

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Abstract

This study aimed at analyzing the socio-economic factors influencing the choice of climate change adaptation strategies of the smallholder pig farmers in Imo State, Nigeria. The objectives include determining the influence of socioeconomic factors on the choice of climate change adaptation strategies and identifying the barriers of smallholder pig farmers adaptation to climate change. A multistage sampling procedure was used to select 90 respondents. Data collection was by questionnaire and interview while data collected were analyzed using Multivariate Probit (MVP) model and descriptive statistical tools. The MVP result revealed that the likelihood of pig farmers choice to building of wallowing ponds; regular vaccination; sprinkling of water; use of less fat food composition; and planting of trees around the pig pen were 35.41%; 55.83%; 70.31%; 60.59% and 46.70% respectively. The joint likelihood of using all the adaptation strategies molded were 19.60%, while their failure to choose all the adaptation strategies were only 2.01%. The pig farmers' choices of adaptation strategies were affected by age; education; farming experience; household size; annual farm income; membership of cooperative society and extension contact at 1% significance level of probability. However, the pig farmers identified high cost of climate change adaptation strategies (98.89%), inadequate knowledge on adaptation strategies (95.56%) and high cost of labour (90.00%) among others as barriers to climate change adaptation in the area. It was recommended that households use multiple combinations of adaptation practices rather than the use of a single adaptation option for huge economic return.

Keywords: Socio-economic factors, Choice, Climate change, Adaptation strategies, Smallholder pig farmers

12. Nutritional Biochemistry of Some Novel Crop Residues for Poultry Production

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Abstract

This study evaluated the nutritional biochemistry of breadfruit hulls (*Artocarpus altilis*), soyabean hulls (*Glycine max*), Bambara nut hulls (*Vigna subterranea*), and melon hulls (*Citrullus lanatus*) to determine their suitability as alternative feed resources for poultry production. Samples were analyzed for proximate composition, mineral profile, and anti-nutritional factors using standard laboratory procedures. Results showed significant differences ($p < 0.05$) among all crop residues. Breadfruit hulls recorded the highest dry matter (95.85%), ash (8.65%), calcium (2.64), phosphorus (7.39), and metabolizable energy (2364.75 kcal/kg). Soyabean hulls had the highest crude protein (23.80%), crude fibre (28.15%), and magnesium (1.42). Bambara nut hulls recorded the highest ether extract (2.65%) and anti-nutritional factors, including tannin (0.53%), phytate (0.53%), oxalate (0.33 mg/dl), and saponin (0.29%). Melon hulls showed the highest nitrogen-free extract (54.75%) and potassium (10.39). The study concluded that these crop residues possess appreciable nutritional value and potential as alternative feed ingredients for poultry production. Breadfruit hulls and soyabean hulls showed superior nutritional qualities, while the relatively low anti-nutritional levels indicate that proper processing and controlled inclusion can enhance their utilization in poultry diets.

Keywords: Nutritional biochemistry, crop residues, poultry production, proximate composition, minerals, anti-nutritional factors

13. Review of Precision Livestock Farming Technologies Adoptions to Enhancing Productivity, Profitability and Global Food Security

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Abstract

Precision Livestock Farming (PLF) technologies are transforming the Animal agriculture sector by integrating advanced tools and data-driven solutions to enhance productivity, profitability, and global food security. This paper review the role of PLF in addressing the growing demand for animal-based products amidst challenges such as population growth, resource scarcity, and climate change. By utilizing the latest innovations such as sensor systems, automated monitoring, artificial intelligence, and data analytics, PLF enables precise management of livestock health, welfare, and performance, ultimately improving efficiency and sustainability. Key aspects discussed include its capacity to optimize resource utilization, reduce production costs, and minimize environmental impacts through real-time decision-making and predictive analytics. Netherlands, Canada, and Nigeria are selected because of their varying levels of PLF adoption and how innovations such as automated milking systems, wearable sensors, and machine learning algorithms are revolutionizing livestock farming. Statistical data and comparative analyses are used to underscore the effectiveness of PLF tools. Moreover, the economic benefits of PLF are explored, emphasizing its role in creating opportunities for entrepreneurship and fostering rural development.

Keywords: Precision Livestock Farming, productivity, profitability, food security, animal agriculture, sustainability, technology adoption

14. Comparative Study of the Physicochemical Properties of Aquaculture Earthen Pond Soils in Ikwuano Local Government Area, Abia State and Makurdi Local Government Area, Benue State

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Abstract

This study was carried out to compare the physicochemical properties and suitability of aquaculture earthen pond soils in Ikwuano Local Government Area, Abia State, and Makurdi Local Government Area, Benue State, Nigeria. The study aimed to evaluate selected soil parameters and determine their implications for aquaculture management in the two locations. Soil samples were collected from representative earthen fish ponds in both study areas and analyzed using standard laboratory procedures. Parameters assessed showed Ikwuano had a slightly higher silt content of 11.70% than Makurdi's 10.60% during the wet season. Conversely, Makurdi had higher silt content of 17.30% than Ikwuano's 9.78% during the dry season. Ikwuano had higher sand contents of 69.90% and 72.00% compared to Makurdi's sand contents of 63.80% and 54.50% during the wet and dry seasons. Ikwuano had less clay content of 18.30% and 18.20% compared to Makurdi's 25.60% and 28.20% during the wet and dry seasons respectively. Results indicated variations in soil properties between Ikwuano and Makurdi ponds, reflecting differences in environmental conditions, management practices, and geological characteristics. Soil pH values ranged within levels generally suitable for aquaculture, with Makurdi recording higher pH values of 5.68 and 5.31 compared to Ikwuano's 5.40 and 5.30 during the dry and wet seasons. Ikwuano and Makurdi had similar soil porosity, organic matter, and bulk density, while Makurdi had a significantly higher particle density than Ikwuano, although some ponds exhibited slight acidity that may require liming. Makurdi pond soils generally showed higher nutrient availability, while Ikwuano soils demonstrated favourable textural characteristics for water retention. The findings suggest that both locations possess soils suitable for aquaculture.

Keywords: Aquaculture, Earthen Pond Soil, Soil Physicochemical Properties, Ikwuano, Makurdi

15. Knowledge Management, Organisational Innovation and Performance Nexus in Tertiary Institutions in Abia State, Nigeria

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Abstract

It is quite clear that many tertiary institutions are unable to provide relevant manpower in the presence of numerous problems such as an inability to adequately fund themselves, poor infrastructural facilities, poor school management, among other issues. However, these unfavorable circumstances have made some lecturers and school administrators not perform up to expectations in terms of teaching, learning, and administrative roles. Unfortunately, the tertiary institutions in Nigeria seem to accept some claims that they are undergoing rapid transformation in the process of education with regard to the purposes of education, contents of education, and pedagogical and methodological approaches. Therefore, there is a need for more comprehensive knowledge management, innovation, and policy interventions that take into account regional differences and make use of partnerships between educational institutions and technology industries. This study utilised the survey method. Primary data were generated from the respondents through the distribution of a questionnaire. The study utilised descriptive statistics and a simple regression approach for data analysis. Based on the results, it was found that knowledge management has a significant and positive effect on creativity of selected tertiary institutions in Abia State, Nigeria. The study further advised that the management of tertiary institutions should continue to create a resilient knowledge-sharing ecosystem, enhance faculty retention, and effectively navigate the challenges posed by uncertain times by adopting innovative knowledge management approaches and best practices like enhanced transparency, tailored training programs, collaborative platforms, reward systems, mentorship programs, flexibility in work models, and continuous feedback mechanisms.

Keywords: Innovation, Management, Performance, Tertiary Institutions, Nigeria

16. Analysis of Socio-economic Factors Influencing Access to Veterinary Services among Pig Farmers in Abia State, Nigeria

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Abstract

Pig production contributes substantially to household income and protein supply in Abia State, yet the productivity of this enterprise depends heavily on farmers' access to veterinary care. This study analysed the socio-economic factors influencing access to veterinary services among pig farmers in Abia State, Nigeria. A multi-stage sampling procedure was used to select one hundred and eighty (180) pig farmers across six Local Government Areas in the State. Data were collected with a structured questionnaire and analysed using descriptive statistics, a four-point rating scale, and a multiple regression model. Results showed that the respondents were predominantly married (79.44 percent), had attained secondary education (63.33 percent), and operated with a mean household size of six persons, a mean farming experience of 5.7 years, a mean herd size of 22 pigs and a mean monthly income of N102,000. The mean age of the respondents was 42.8 years. Pig farmers in the study area recorded a high level of access to veterinary services, with a grand mean score of 3.10, particularly for disease prevention and control, consultancy services and breeding services. The semi-log regression equation, selected as the lead equation on the basis of its R^2 value and number of significant variables, returned an R^2 of 0.85 and showed that age was negatively related to access while marital status, years of education, household size, herd size, farm income and access to credit were positively and significantly related to access to veterinary services. The null hypothesis of no significant relationship between socio-economic characteristics and access to veterinary services was therefore rejected. The study concludes that access to veterinary services among pig farmers in the study area is shaped largely by the socio-economic standing of the household rather than by the availability of services alone, and recommends that extension agencies and credit institutions in the State design targeted outreach for older, less educated and smaller-holding farmers in order to narrow this access gap.

Keywords: Socio-economic factors, veterinary services, access, pig farmers, Abia State

17. Participation of Rural Women in Agricultural Cooperative Societies in Umuahia North Local Government Area, Abia State, Nigeria

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Abstract

This study analysed the Participation of Rural Women in Agricultural Cooperative Societies in Umuahia North Local Government Area, Abia State, Nigeria. A multi-stage sampling procedure was employed in the sampling of 80 respondents that were involved in the survey. Structured copies of questionnaire were used to get responses from the women. Both descriptive and inferential statistics analysis were used to analyse the data. Major findings showed that mean age was 44.8 years, average household size was 5 persons, mean farming experience was 13.69 years and majority (48.8%) had secondary education. Also, the average length of membership was 6.60 years while majority of respondents (62.5%) receive extension services fortnightly. The level of participation of rural women agricultural cooperatives is high with a grand mean of 2.30 higher than the benchmark mean of 2.00. However, poor leadership and management ($x=3.89$) topped the chart as the most constraint faced the rural women participating in agricultural cooperative societies. The coefficient of farming experience (2.835), years in cooperatives (3.23), household size (2.92) and marital status (16.071) were positively related to level of participation in the co-operative societies, this implies that increase in any of these variables increases level of participation in the co-operative societies. The study concludes that the rural women participation in agricultural cooperative societies was high despite the various constraints they face and therefore, recommends that Government should regulate the activities of agricultural cooperative societies to ensure good leadership and proper management of their finances.

Keywords: Participation, Rural women, Agricultural Cooperative societies, Constraints to participation

18. Perception of Non-Timber Forest Resources Among Rural Households in Umuahia Agricultural Zone of Abia State, Nigeria

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Abstract

Non-Timber Forest Resources (NTFRs) which are readily available in rural communities are perceived as contributing to income, food security and dietary requirement of the households in Nigeria. Therefore this study assessed rural households' perception about Non-Timber Forest Products Resources (NTFPRs) in Umuahia Agricultural Zone of Abia State, Nigeria. It specifically assessed Non-Timber Forest Resources (NTFRs) that were available; assessed their perception towards Non-Timber Forest Resources (NTFRs) and examined constraints encountered by rural households in harnessing Non-Timber Forest Resources (NTFRs) in the study area. Purposive and multi-stage sampling procedure was adopted to select sixty rural households (60) used for the study. Data were collected using a structured questionnaire and analyzed with descriptive statistics such as means, frequency counts and percentages. Result showed that 100.00% of the respondents affirmed that all the stated NTFRs were available due to prevalence of natural forests that serves as supplementary source of food and fiber for rural households in the study area. The rural households had favourable perception (mean=3.2) and high constraints (mean=3.2) to harnessing of NTFRs. The study concluded that rural households had favourable perception of NTFRs. This study recommended therefore that Government and relevant stakeholders should promote sustainable utilization and management of Non-Timber Forest Resources (NTFRs) through the establishment and enforcement of community-based forest management policies.

Keywords: Perception, NTFRs, Rural, Households

19. Comparative Microbial Analysis of Soils in South West and North West Geopolitical Zones of Nigeria

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Abstract

This study presents a comparative analysis of soil microbial properties of two Geopolitical Zones of Nigeria — South West and North West Geopolitical Zones. The South West ecological zone comprises the Tropical Rainforest and the Southern Guinea Savannah Soil, while the North West ecology is the Sudan Savanna. The study was carried out in Igbotako town in Ondo State (South West) and Challawa town in Kano State (North West). Soil samples were collected from seven different sites in Igbotako and five different sites in Challawa, homogenized and standard laboratory analysis was carried out on them. Serial dilution, microscopy, staining techniques, and biochemical tests were carried out to identify microorganisms on select representative microbial colonies. Total Heterotrophic Bacteria (THB) count value ranged from 1×10^2 CFU/g (IGB S1) to 1×10^4 CFU/g (IGB S6) in Igbotako (Ondo State), and 2×10^1 (CHLW 5) to 7×10^1 (CHLW 4) in Challawa (Kano State). Total Coliform Count (TCC) values ranged between 1×10^1 CFU/Kg and 1×10^2 CFU/Kg in Igbotako, while not detected in Challawa. Faecal Coliform Count (FCC) was observed to be 1×10^1 CFU/Kg in IGB S2 and IGB S3 (Igbotako), while FCC was not detected in all the soil samples subjected to analysis in Challawa (Kano State). From this study, the South West is more fertile than the North West because of the greater presence of microorganisms especially the Heterotrophic bacteria (nutrient recyclers) which increase microbial activity and result in increased availability of nutrients for crop growth. This study therefore gathered information on the microbial characteristics of the soils of the South West and North West Ecological Zones of Nigeria in order to establish a baseline for future reference to microbial activity in these regions.

Keywords: Comparative analysis, Microbial properties, Characterization, Homogenized, Heterotrophic

20. Water Related Diseases and Crop Farmers' Efficiency: Evidence from Osun State, Nigeria

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Abstract

The study examined the effect of water related diseases on efficiency of crop farmers in Osun State, Nigeria. A three-stage sampling technique was used to select 180 crop farmers from whom data were obtained. Data collected were analysed with the aid of descriptive statistics and stochastic production frontier. Result of descriptive statistics obtained showed that high proportion of the farmers were male with mean age of 49.7 years. Majority of the farmers were married with most having secondary education and mean household size of 5 members. The prevalent water related diseases in the area were malaria (65%), typhoid fever (20.6%) and dysentery (14.4%). The result of stochastic frontier revealed seed and farm size made significant contribution to output at 10% and 1%, respectively. While age (1%), age square (1%), land steepness or slope (5%) as well as distance to source of portable water (5%) were the factors that influenced inefficiency among crop farmers in the study area. The need for the use of improved seed varieties, cultivate large hectarage of land, operate on gentle slope land that is close to source of portable water as well as preventive measure against water related diseases were advocated for.

Keywords: Crop farmers, Efficiency, Stochastic production frontier, Water related diseases

21. Assessing Mulch Placement Duration for Sustainable Weed Management and Improved Maize (*Zea mays* L.) Performance

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Abstract

Sustainable crop production requires effective and environmentally friendly weed management techniques such as mulching. A field study was conducted at Ebonyi State University Teaching and Research Farm, Abakaliki, to determine the effect of mulch placement durations on weed growth and maize (*Zea mays* L.) performance. The seven treatments: polyethylene mulch till 2, 4, 6 and 8 weeks after sowing (WAS), or till harvest, grass mulch and no-mulch (control), coded P2W, P4W, P6W, P8W, PTH, GM, and NM, respectively, were arranged in a randomized complete block design (RCBD) with four replications. Data collected on weeds, maize growth and yield were analyzed using analysis of variance (ANOVA) procedure at $p=0.05$ with GenStat Package Version 8.1. Means were compared by Duncan's New Multiple Range Test (DNMRT) method. The results indicated significant responses ($p<0.05$) of weeds and maize to mulching. The no-mulch (control) which was hand-weeded twice, and plots mulched and hand weeded once (P2W, P4W and P6W) had statistically similar low weed density and weed dry matter. Plots mulched with polyethylene till 2 WAS produced the highest number of seeds per cob (324.8) and highest grain yield (3.49 t/ha), whereas the least yield values of 274 seeds/cob, and 3.03 t/ha grain yield were obtained from the no-mulch control. Collectively, the findings showed that in situ polyethylene mulch effectively suppressed weeds, reduced the number of hand weeding from two to one, and enhanced maize performance with the 2 weeks polyethylene mulch duration as the most effective.

Keywords: Mulch, maize, polyethylene, weed, yield

22. Glycemic and Sensory Assessment of Snacks and Drinks Made from Tamarind Velvet and Almond Flour

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Abstract

This study assessed the glycemic index and sensory acceptability of snacks and drinks produced from tamarind velvet (*Dialium guineense*) and almond flour (*Prunus dulcis*) with the aim of developing nutritious and glycemic-friendly food products suitable for health-conscious consumers and individuals requiring controlled blood glucose intake. A Research and Development (R&D) design was adopted. Tamarind velvet and almond flour were processed into cake, bread, juice, and smoothie formulations at varying blend ratios. The glycemic index (GI) of the products was determined using the in vivo incremental Area Under the Curve (iAUC) method in accordance with ISO 26642:2010 standards, while sensory evaluation was conducted using a hedonic rating scale to assess appearance, aroma, texture, taste, mouthfeel, and overall acceptability. Data obtained were analyzed using one-way Analysis of Variance (ANOVA) and Duncan's Multiple Range Test at $p \leq 0.05$. The results revealed significant differences ($p \leq 0.05$) among the formulated products. Glycemic index values ranged from 59.24% to 77.19%, with samples J302 (59.24%) and J301 (59.99%) recording the lowest GI values, indicating slower glucose release and more favorable glycemic responses. Conversely, C102 (77.19%) and C101 (76.07%) exhibited the highest GI values. Sensory evaluation showed that C102 was the most preferred sample, recording the highest scores for appearance (7.12), aroma (7.00), texture (6.62), taste (7.37), mouthfeel (7.25), and overall acceptability (35.37), followed by C101 with an overall acceptability score of 32.37. The J-series samples generally recorded lower sensory ratings, particularly J302, which had the lowest overall acceptability score (17.37). The study concludes that tamarind velvet and almond flour can be effectively utilized in the production of acceptable functional snacks and drinks with varying glycemic responses. The lower glycemic index observed in the juice formulations suggests their potential suitability for individuals seeking foods that support blood glucose management. Furthermore, the high sensory acceptability of selected formulations demonstrates the feasibility of incorporating tamarind velvet and almond flour into consumer-friendly food products. The study recommends increased utilization of these locally available ingredients in food product development and the promotion of lower-GI formulations for individuals with diabetes, obesity, and other metabolic disorders.

Keywords: *Glycemic index, tamarind velvet, almond flour, functional foods, sensory evaluation, snacks, drinks, blood glucose response*

23. Effect of Agricultural Mechanization on Technical Efficiency of Smallholder Farmers in Orire Local Government Area of Oyo State

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Abstract

Adoption of mechanical technologies can help alleviate the labor bottlenecks, enhance agricultural production, and lower the unit cost of crop production. This is because mechanized agriculture improves the farm operation's timeliness, quality, and efficiency and reduces drudgery. The implementation and the use of agricultural mechanization has been seen as a driver of productivity and efficiency in modern agriculture. Mechanization in Nigeria is expected to help smallholder farmers who dominate the agricultural sector to solve the problem of labour shortage, enhance the timeliness of farm practices and improve efficiency. This study analyzed the effects of agricultural mechanization on the technical efficiency of smallholder farmers. Primary data through multistage sampling technique was used to select 134 farmers through using well-structured questionnaire. Descriptive statistics and stochastic frontier model were used to analyze the objectives of the study. The result of the study showed that most of the farmers were middle-aged, experienced, and predominantly male. The stochastic frontier analysis result revealed that fertilizer, labour, farm size, seed input, and herbicide all significant at 1% influenced the output of farmers. The result of the inefficiency model showed that extension agent and mechanization significantly decrease technical inefficiency of the farmers and the mean TE was found to be 0.84. The study therefore recommended that Agricultural extension services should be strengthened to improve farmers' knowledge and skills in proper operation and maintenance of mechanization and other farm inputs. Also policies that will help reduce and subsidize the cost of accessing mechanization should be implemented.

Keywords: Agricultural Mechanization, Technical Efficiency, Smallholder farmers, Stochastic frontier Analysis

24. Effect of Adoption of Improved Pig Production Technologies on Households' Food Security of Farmers in Abia State, Nigeria

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Abstract

This study assessed the effect of adoption of improved pig production technologies on households' food security of farmers in Abia State, Nigeria. It specifically identified the pig production systems practiced by farmers, ascertained their levels of adoption of pig production technologies, and determined the food security status of farmers in the study area. Multi-stage sampling procedure was used to select one hundred and twenty (120) pig farmers. Data were collected using a structured questionnaire and analyzed with descriptive statistics and inferential statistics (simple regression analysis). The results also revealed that majority (95.8%) of farmers used intensive production systems and had high adoption (mean=3.6) of pig production technologies as majority (70.8%) were food secure while 29.2% were food insecure. Simple regression showed that adoption of improved pig production technologies had effect on the household food security of farmers at 5.0% level of probability. The study concluded that farmers had high adoption of pig production technologies which in turn had positive effect on their food security status. The study therefore recommended that extension agencies should provide regular training programmes on improved pig production technologies to enable farmers access farm inputs in order to increase farm income and attain food security in the study area.

Keywords: Adoption, Pig Technologies, Food Security, Farmers

25. Extension Services, Youth and Gender Inclusion: Implications for Sustainable Development in Nigeria

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Abstract

Sustainable agricultural productivity cannot survive well in the absence of a robust extension service that targets youth and women inclusiveness. This study investigated the accessibility of agricultural extension services among youth and women farmers in Sokoto State, Nigeria, and its implications for sustainable development. Using a multi-stage sampling technique, primary data were collected by the use of a structured questionnaire from 360 smallholder farmers across the agricultural zones of Sokoto State. The data were analyzed using descriptive statistics, and Logit regression analysis. The results revealed a severe gender gap in extension delivery, with 74.2% of older male farmers having consistent extension contacts compared to only 53.1% of female farmers and 41.5% of the youth sampled. Logit regression showed access to credit, level of formal education, membership in cooperative societies, and farm size significantly influenced ($p < 0.01$) the level of participation in extension systems. Socio-cultural barriers, including land tenure systems and a deficiency of female extension personnel, heavily restricted youth and women from adopting sustainable agricultural practices. This directly underscores Nigeria's target of Sustainable Development Goals (SDGs). The study concludes that sustainable agricultural transformation in Northwest Nigeria is impossible without gender inclusion. It recommends institutionalizing digital, gender-responsive extension networks and implementing local land reforms to give access to production factors to youth and women.

Keywords: Agricultural Extension, Youth Inclusion, Gender, Sustainable Development, Sokoto State

26. Return on Capital Employed under Macroeconomic Instability: Firm-Level Panel Evidence from Nigerian Agribusinesses with Robust Estimation

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Abstract

This study investigates trends and determinants of profitability proxied by return on capital employed (ROCE) for Nigerian corporate agribusinesses over 2015-2023, a period of pronounced macroeconomic instability and weakened firm resources. Using firm-level data from audited annual financial reports of the firms obtained from Nigeria Stock Exchange website, and macroeconomic indicators from the World Bank and the Central Bank of Nigeria, ROCE trends was modeled with a quadratic specification; and determinants of profitability estimated using fixed-effects panel regressions plus Driscoll-Kraay robust standard errors to address cross-sectional dependence arising from a shared macroeconomic environment. Robustness checks using pooled OLS, fixed-effects and random-effects specifications confirmed the consistency of results. Results indicate heterogeneous ROCE dynamics across firms as some firms exhibit accelerating or decelerating growth in ROCE, others remain stagnant, reflecting uneven resilience within the sector and a rising incidence of firm exits. Key macro- and firm-level determinants of ROCE include economic policy uncertainty, exchange rate, inflation, bank credit, liquidity and firm size, each exerting statistically significant effects. Interest rate, firm age and leverage are generally insignificant, although robustness checks reveal model-dependent sensitivities. The findings emphasize the importance of policy stability, financial mediation and firm resource management for unlocking profitability and strengthening returns on deployed capital in Nigerian agribusinesses.

Keywords: Return on Capital Employed, Agribusiness, Macroeconomic, Firm-level, Panel Data, Robust Estimation

27. Adaptation Strategies of Cassava Farmers to Climate Change in Abia State, Nigeria

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Abstract

This study examined the adaptation strategies of cassava farmers in Abia State, Nigeria, in response to climate change. The study employed opinion survey which made use of a questionnaire to collect data from a sample of 180 respondents using multi-stage sampling technique. Data were analyzed using descriptive and inferential statistics. Results showed that farmers rely heavily on informal networks (74.44%) and radio programmes (67.22%) for climate information, while extension agents (49.44%) complement these sources through demonstration methods (72.78%) and farmer-to-farmer extension (66.67%). Disseminated strategies include early warning systems (79.44%), short-duration crop varieties (72.78%), soil conservation (57.78%), and drought-tolerant crops (56.11%), alongside sustainable practices such as mulching and agroforestry. Logistic regression analysis showed that access to radio programmes (OR=4.48, $p<0.001$), extension agents (OR=3.00, $p<0.01$), and education level (OR=1.22, $p<0.05$) significantly influence adoption of early warning systems. Overall, the study concludes that cassava farmers in Abia State are adapting through a mix of traditional knowledge, extension support, and climate-smart practices. It is therefore recommended that strengthening extension services, expanding ICT-based communication, and subsidizing resource-intensive strategies will enhance resilience and ensure sustainable cassava production under climate variability.

Keywords: Cassava, Climate Change, Adaptation, Farmer Resilience, Sustainable Agriculture

28. Determinants of Rice Processors' Decision to Adapt to Climate Change in Gwagwalada Area Council of the Federal Capital Territory (FCT), Nigeria

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Abstract

The study was on determinants of rice processors' decision to adapt to climate change in Gwagwalada area council of the Federal Capital Territory, Nigeria. Primary data was used and advanced through questionnaire administered to 84 sampled rice processors. The data was analyzed through descriptive and binary probit regression. The result indicated that 64.3% were male, 59.5% are married, average age was 40.5 years, household size was 5 persons and years spent in school was 9.9. Their mean rice processing experience was 5 years and 52.4% were members of rice processing associations. About 73.8% are aware of climate change and had implemented adaptation measure. Also 42.9% choose adaptation measure because of low cost and 28.6% for convenience. Some invested in new technology (81%), water saving (66.7%) and the use of renewable energy (85.7%). The coefficient of education (-1.2877), association membership (1.7916), water saving technology (1.8999) and new technology (1.2491) were significant. The constraints faced by rice processor were lack of information (88.1%), weather event (78.6%), lack of finance (75%) and technological limitations (70.2%). The study recommended for necessary support to rice processors such as credit facility. Rice processors are encouraged to join association to access innovations for greater productivity.

Keywords: Rice processors decision, climate change adaptation, binary probit

29. Smart Agricultural Innovations for Sustainable Cassava Utilization, Food Security and Green Growth in Nigeria: A Review

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Abstract

Cassava (*Manihot esculenta* Crantz) remains one of Nigeria's most strategic crops for achieving food security, promoting rural livelihoods, and driving industrial development. Beyond serving as a staple food for millions of households, cassava has emerged as an important industrial raw material for starch, high-quality cassava flour, bioethanol, livestock feed, pharmaceuticals, and other bio-based products. This review examines how smart agricultural innovations and sustainable utilization of cassava can contribute to green growth and sustainable development in Nigeria. It synthesizes current literature on cassava production, processing, value addition, commercialization, and policy support while highlighting opportunities presented by biotechnology, precision agriculture, mechanization, digital agriculture, and climate-smart production systems. Lessons from Thailand's successful cassava industry are examined to identify strategies for strengthening Nigeria's competitiveness in global cassava markets. Despite being the world's largest producer of cassava, Nigeria continues to face challenges including low farm productivity, limited mechanization, inadequate processing infrastructure, weak research-industry linkages, poor market integration, and inconsistent policy implementation. Addressing these constraints requires coordinated investment in innovation, digital technologies, sustainable resource management, and institutional collaboration. The review advocates adoption of the Triple Helix model involving research institutions, government, and industry to accelerate technology transfer, commercialization, and value-chain development. Integrating smart agricultural technologies with sustainable farming practices offers considerable opportunities for reducing post-harvest losses, enhancing productivity, promoting green industrialization, improving food security, generating employment, and increasing foreign exchange earnings. With sustained policy commitment and innovation-driven investments, cassava can become a cornerstone of Nigeria's climate-smart agricultural transformation and sustainable bioeconomy.

Keywords: Cassava; smart agriculture; sustainable utilization; food security; green growth

30. Developing a Digital Rainfall Decision Support Calendar for Precision Agricultural Operations Using Long-Term Daily Rainfall Data in Umudike, Southeastern Nigeria

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Abstract

Rainfed agriculture in southeastern Nigeria still relies on fixed calendar dates for field operations, despite strong dependence on rainfall timing. This study analyzed daily rainfall records from Umudike (1986-2025) to characterize rainfall variability, trends, onset and cessation, length of the growing period (LGP), dry/wet-spell behavior, and seasonal distribution, thereby informing a prototype Digital Rainfall Decision Support Calendar (DRDSC). Onset (≥ 20 mm in 3 days after 1 March, uninterrupted by a ≥ 10 -day dry spell within 30 days) averaged 29 March (day 89), ranging from 1 March (1988) to 9 May (2024), with high interannual variability ($SD=19.2$ days; $CV=21.4\%$). Cessation (last rain day ≥ 0.85 mm after 1 September, followed by a ≥ 10 -day dry spell) averaged 2 December (day 337), ranging from 25 October (1996) to 30 December (1995), and was far more stable ($CV=5.6\%$). Mean LGP was 247 days (range 209-300). Within-season dry spells averaged 2.6 days (maximum 39 days, 1987), with about 1.3 spells of ≥ 10 days per season; wet spells averaged 2.3 days (maximum 20 days, 2003). September had the highest mean rainfall (340.8 mm), and the August break was weak (296.4 mm versus 319.4 mm in July). Mann-Kendall and Sen's slope analysis of the quality-controlled annual series showed a weak, statistically non-significant decreasing tendency in annual rainfall (Sen's slope = -5.69 mm/year; $p=0.178$). These indices were integrated into a month-by-month DRDSC linking rainfall conditions to recommended field operations, suitable for deployment as a mobile app, Excel dashboard, GIS tool, web platform, or farm management information system module. Onset timing, rather than cessation, is identified as the principal source of planning risk in Umudike's rainfed cropping calendar.

Keywords: rainfall onset / cessation; dry spell; rainfall trend / Mann-Kendall test; length of growing period; digital advisory calendar; precision agriculture; Umudike

31. Yield Performance and Agromorphological Characterisation of Advanced Cassava Genotypes (*Manihot esculenta*) in a Uniform Yield Trial at Ikenne, Ogun State, Nigeria

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Abstract

A uniform yield trial comprising 15 advanced cassava breeding lines (NR19C3aF series) and two released check varieties (IITA-TMS-IBA00070 and TMEB419) was established at Ikenne, Ogun State, Nigeria. The trial was planted in a randomized complete block design (RCBD) with three replications; each plot comprised 36 plants (6 m x 6 m), with the central 16-plant net plot (4 m x 4 m) serving as the primary data collection area. Agromorphological data including plant height, height to first branch, canopy architecture (scored 1-5), and plant vigour (scored 3-7) were collected at 3, 6, and 9 months after planting (MAP). At harvest (9 MAP), yield components including number of stands harvested, total root number, marketable root number and weight, non-marketable root number, total fresh root weight, shoot biomass, root rot incidence, root shape, root colour, and dry matter content (DMC%) were assessed. Analysis of variance (ANOVA) was conducted using Genstat 12th edition, and means were separated using the Standard Error of Difference (SED) at $p \leq 0.05$. Significant genotypic variation was detected for all yield traits except non-marketable root number ($p=0.298$) and shoot weight ($p=0.057$). IITA-TMS-IBA00070 produced the highest marketable root weight (52.90 kg/net plot) and total fresh root weight (57.68 kg). NR19C3aF129P0001 was the top experimental genotype (marketable wt: 34.90 kg; total root wt: 36.82 kg; SED=6.649). NR19C3aF177P0002 recorded the highest DMC (37.0%; SED=1.050, $p=0.001$), exceeding the 35% processing quality threshold. Root rot incidence was zero for 14 of 15 experimental lines; TMEB419 had the highest root rot score (4.00). These findings support the advancement of NR19C3aF129P0001, NR19C3aF177P0002, NR19C3aF12P0003, and NR19C3aF170P0001 to multi-environment testing.

Keywords: cassava, uniform yield trial, marketable root weight, dry matter content, standard error of difference

32. Agri-Food Systems, Green Economy and Sustainability: Comparative Review of Indicators in West Africa

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Abstract

The agri-food systems of West Africa face the paradox of meeting rising food and fibre demands while safeguarding fragile ecological resources. The objective of this study is to evaluate country-level adherence to green economy principles by comparing sustainability indicators across Benin, Cameroon, Chad, Niger, and Nigeria. Employing time-series data (1990-2023) into absolute and relative measures, the study examines livestock density, agricultural emissions, pesticide use, population growth, nitrogen deposition, bioenergy consumption, and water-use efficiency. Empirical analysis indicates notable disparities across the subregion. Cameroon and Benin exhibit the highest livestock densities, measured at 9.85 and 8.72 LSU/ha respectively, indicating more intensive mixed farming systems. Nigeria is the highest contributor to agricultural emissions, with a recorded volume of 21.12 kt, and equally accounts for the largest share of charcoal consumption at 990,958 TJ. These can be linked with demographic weight and reliance on traditional biomass energy. In contrast, Benin shows relative efficiency in resource use with the highest score in water-use efficiency at 10.52 USD/m³. Niger's 0.34 USD/m³ can be linked to structural constraints in its dryland production systems. These disparities can be due to challenges of weak irrigation infrastructure and demographic pressures. The study drew its conceptual underpinning from the Circular Economy (CE) framework, and the need for adaptive strategies that balance economic growth, ecological wellbeing, and social equity. Policy implications point to diversification, renewable energy adoption, and integrated resource management as pathways toward sustainable and inclusive agri-food systems in the subregion.

Keywords: Agri-food systems, Circular Economy, Green Economy, Sustainability

33. Agricultural Entrepreneurship and Gendered Rural Empowerment in Imo State, Nigeria: A Systematic Review of Youth and Women's Participation in Agri-Food Value Chains, with a Focus on the LIFE-ND Project

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Abstract

This paper presents a comprehensive review of literature on agricultural entrepreneurship as a pathway to gendered rural empowerment in Imo State, Nigeria, with a specific focus on youth and women's participation in agri-food value chains. This review synthesises empirical studies, programme evaluation reports, policy documents, and institutional publications between 2014 and 2026 to critically assess the ecosystem of agricultural enterprise interventions and their empowerment outcomes for rural youth and women in Imo State. Adopting an integrated theoretical lens combining Amartya Sen's Capability Approach and Douglass North's Institutional Theory, the review organizes evidence across five thematic domains: value chain participation and enterprise development; access to productive resources; skills acquisition and entrepreneurial training; socio-cultural norms and gendered division of agricultural labour; and institutional frameworks and policy implementation. Findings reveal a pronounced schism between policy rhetoric and grassroots realities. While flagship interventions — including the Livelihood Improvement Family Enterprise-Niger Delta (LIFE-ND) project, the Renewed Hope Initiative, and various NGO-led schemes — have expanded access to training and capital, persistent barriers undermine sustainable enterprise development. These include inadequate infrastructure, limited credit access, land tenure constraints, climate variability, socio-cultural norms that relegate women to less lucrative nodes of value chains, and persistent implementation gaps in policies and programmes. The paper concludes that agricultural entrepreneurship interventions in Imo State often address symptoms rather than structural impediments to gendered economic empowerment. It offers actionable recommendations for policymakers, emphasising the need to shift from generic training to ecosystem-based approaches that simultaneously address informal institutional barriers alongside formal support mechanisms.

Keywords: Agricultural entrepreneurship, youth empowerment, women's economic empowerment, agri-food value chains, systematic review

34. Assessment of Rural Household Engagement in Melon Production, Processing and Marketing Enterprise in Orumba South Local Government Area of Anambra State, Nigeria

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Abstract

The work assessed the rural households' engagement in melon production, processing and marketing enterprise in Orumba South Local Government Area of Anambra State, Nigeria. The specific objectives were to describe the socioeconomic characteristics of the respondent, assess the level of engagement of rural household in melon production, processing and marketing enterprise, ascertain level of involvement of household members in melon production activities, ascertain level of involvement of household members in melon processing activities, ascertain level of involvement of household members in melon marketing activities, estimate the quantity of melon seed produced by the household and estimate the income generated from melon by the household annually. Data were sourced primarily through questionnaire. Eighty respondents were used for this study. The results however made the following findings; majority 70.1% of the household's melon farmers were female, within the age range 41 to 50 years, had a secondary school education. The result revealed that majority 75.7% and 66.3% always engaged in production and processing higher than 35.1% that always engaged in marketing of melon, respondents who are fully involved in melon production activities were adult female. With the mean value 67.8% showed that adult female was highly involved in melon processing activities, than 10.9% adult male. Household members rate of involvement in the activities of melon marketing were in the following ways: adult female 53.8%, adult male 32.7%, 11.2% youth male, 2.3% youth female and 1.3% children. When 73.6% melon was produced only 2.6% was sold which generated an income of ≤30,000 naira. The regression analysis shows that gender of the respondent negatively influenced household level of engagement in melon production, while age and educational attainment positively influenced household level of engagement in melon production. In conclusion, almost all the household members were engaged in production and processing of melon enterprise and the household members fully involved in melon production activities were adult female. The study therefore recommends that farm households should participate fully in melon production so as to cater for their needs.

Keywords: Rural Household Engagement, Melon Production, Melon Processing And Marketing Enterprise

35. Disease Resistance Profiles, Sprouting Stability and Vigour of Advanced Cassava Genotypes (*Manihot esculenta*) in a Uniform Yield Trial at Ikenne, Ogun State, Nigeria

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Abstract

Cassava Mosaic Disease (CMD), Cassava Bacterial Blight (CBB), Cassava Green Mite (CGM), and Cassava Anthracnose Disease (CAD) are primary biotic stresses limiting cassava productivity in Nigeria. Equally, poor sprouting establishment compromises stand density, canopy closure, and marketable yield. This study assessed the disease resistance profiles, sprouting stability, and canopy vigour of 15 advanced cassava breeding lines (NR19C3aF series) evaluated alongside two released checks (IITA-TMS-IBA00070 and TMEB419) in a uniform yield trial at Ikenne, Ogun State, using a randomized complete block design (RCBD) with three replications. Sprouting (total stand in 36-plant plot and net stand in 16-plant net plot) was assessed at 3, 6, and 9 months after planting (MAP). Disease severity (scale 1-5: 1=no disease; 2=mild; 3=moderate; 4=severe; 5=highly severe) and incidence (number of affected plants per 16-plant net plot) were scored at 3, 6, and 9 MAP for CMD and CBB; CGM and CAD from 6 MAP. Vigour was scored 3-7 (3=not vigorous; 5=vigorous; 7=highly vigorous) at each assessment. Means were separated using the Standard Error of Difference (SED). Net stand count differed highly significantly (SED=1.886, $p<0.001$). Fourteen of 15 experimental lines maintained CMD severity of 1.0 at all assessment periods. TMEB419 showed CMD severity of 2.67 (incidence: 3.67 plants) at 3 MAP (significantly higher than all experimental lines; $p<0.001$), declining to 1.33 at 9 MAP. CBB severity was significant at 3 MAP (SED=0.287, $p=0.099$) but not at 9 MAP ($p=0.810$), as genotypes converged. CGM and CAD were at low-moderate levels with no significant differentiation. Vigour at 3 MAP (SED=0.777, $p<0.001$) and 6 MAP (SED=0.663, $p=0.001$) differed significantly; 9 MAP vigour was non-significant ($p=0.130$). NR19C3aF244P0004, NR19C3aF177P0002, NR19C3aF129P0001, and NR19C3aF133P0004 combined CMD immunity, full or near-complete net stands, and peak vigour scores, making them the strongest candidates for multi-environment advancement.

Keywords: *Cassava Mosaic Disease, Cassava Bacterial Blight, Cassava Anthracnose Disease, Sprouting, Disease Resistance*

36. Pork Consumption and Nutritional Security in Nigeria: Health Implications for a Sustainable Food System

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Abstract

This paper provides a comprehensive review of pork consumption and nutritional security in Nigeria and many low- and middle-income countries aimed at educating Nigerians on the current insight and reality of pork to enable individuals take other bold steps in seeing pork as a meat of delicacy that is nutritionally proactive and free from sacrilegious domain. Many Nigerians are skeptical on consuming pork mainly due to historical background view of pig as an unclean and omnivorous animal. Eating pork to some people is a taboo, health risk, linked with its allergic and hormonal implications. Consumer's limited knowledge about pig production, processing and nutritional implications explains the lack of definition of beliefs and preferences about meat from swine. Nigeria currently faces a sustainable protein malnutrition and malnourishment challenge. Pork, which is the meat obtained from pig, offers high biological value animal protein with a short production interval and this could be used to address malnutrition and nutrient deficiencies in Nigeria. Adequacy of protein and macronutrient intake in the Nigerian menu is very crucial and optimum protein intake is a reflection of the standard of living of a particular setting/community. The paper concludes that tackling the growing demand for animal protein to the level envisioned by the Global Goals for Sustainable Development (GGSD) in Nigeria calls for the establishment of pig farms since pork can enhance nutritional security and livelihoods when produced and consumed under safe, regulated, and culturally sensitive systems.

Keywords: Animal protein gap, Food security and safety, public health, Nutrition transition, sustainable diets

37. Simulation on Formulation and Development of Organic and Inorganic Materials for Ceramic Finish: Towards an Extension of Materiality in Aesthetics as Opportunities in Science and Technological Innovations

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Abstract

Within the praxis of Contemporary Ceramic practice as study of the problems and prospects engendered through studio practice in research and findings on the Nigeria Ceramic Industry as synergistic/systematic structure of 21st century interventions/innovations in science and technology. The thrust of opportunities relies on such systematic strategy serving not only as a distinctive feature but an influence driven by sole responsibility owned to the industrial designer in ensuring the essence of prerogative practice of artistry and ingenuity in skill as orientations engendered through active and participative roles as forms of practice, that materialise environment, ecology and culture in the realm of waste, recycling and upcycling which adjusts the ceramic industrial development and its trend, evolved as pedagogies that acknowledge relevant disciplines. Where materiality in aesthetics as a form of material science and technology becomes the measure whereby the transformative system relies on the enrichment of such development in ceramic practice as a valuation process which appraises the turn in global south/global north perspectives that meet the objectives of the art map, model, system and structure encountered with the pervasive goals of the art world through the demands of the global art market and its system as perspectives of the ceramic industry and practice relations as agents of political, social, cultural, and economic movement in art management and curatorship.

Keywords: Simulation, Formulation, Development, Upcycling, Recycling

38. Impact of SMEs Extension and Support Services Development Policies on Youth Engagement in Agribusiness in Nigeria (1992-2022)

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Abstract

This study examined the impact of SME extension and support services development policies on youth participation in agribusiness. Annual time-series data within 1992-2022 on employment of extension and support services workers, prevailing ratio of extension and support services workers to farmers and number of youth employed as extension and support services workers were collected. Data were analyzed using advanced econometric techniques, including the Augmented Dickey-Fuller (ADF) unit root test to examine stationarity, the Autoregressive Distributed Lag (ARDL) Bounds Test to determine the existence of long-run relationships among the variables, and the Seemingly Unrelated Regression (SUR) model to estimate the interrelated effects of SME extension and support services development policy instruments on youth agribusiness engagement. The ADF unit root test revealed that the variables had mixed orders of stationarity, I(0), I(1) and I(2). Also, the ARDL Bounds Test indicated the presence of a long-run equilibrium relationship among the variables. Furthermore, the SUR estimation results showed that only regular employment of youth extension and support services workers wielded a strongly significant positive influence ($\beta=11.176$, $p=0.000$) on youth engagement in agribusiness. The study concludes that efficient and functional youthful extension and support services system is vital for promoting youth participation in agribusiness. It therefore recommends regular employment of youths as extension and support services workers to meet up World Bank and Food and Agricultural Organization (FAO) recommended ratios (1:500 and 1:400 respectively) for agricultural extension workers to farmers.

Keywords: SMEs Policies, Extension and support services, Agribusiness, Youth-engagement

39. Economics of Cassava Value Chain in Imo State, Nigeria

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Abstract

The major objective of this study was to analyse the economics of cassava value chain in Imo State with a view to determine the net return from various cassava value chain actors. A multistage sampling technique was used to select a total number of 318 value chain actors selected from three agro-ecological zones of Imo State. Primary data were collected using structured questionnaires, this was augmented with key informant oral interviews. Data was analysed using simple descriptive statistics such as mean, mode and frequency distribution as well as regression analysis. The results showed that the cassava value chain in Imo State was made up of input suppliers, producers, processors, aggregators and traders. Major processed cassava products identified include garri, fufu, starch, flour, chips and tapioca. Analysis of cost returns also showed that cassava farming, aggregation, processing and trading all yielded positive net returns at #3,925,000 per tonne. Cassava aggregation had net return #2,091,400, processing #3,061,540 while cassava traders recorded net return. Regression analysis also showed that age, education, farming experience, household size, cooperative membership, access to credit, annual income and scale of operation significantly influence profitability. Major constraints to cassava value chain performance include inadequate capital (87.3%), poor road infrastructure (81.4%) and high labour cost (78.6%), poor storage and processing facilities (74.8%), unstable prices (64.1%) and poor marketing coordination (61.8%). It is therefore recommended that significant investment in rural infrastructure, improved farmers' access to affordable credit, enhanced extension services and improved market information system will help to enhance value chain performance and efficiency.

Keywords: *Cassava, Value Chain, Actors, Constraints*

40. Impact of SMEs Finance Development Policies on Youth Access to Finance for Agribusiness Engagement (1992-2022)

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Abstract

This study examined the impact of SME finance development policies on youths' access to finance for agribusiness engagement in Nigeria. Annual time-series data spanning 1992-2022 were collected on the number of youth beneficiaries of guaranteed agribusiness loans, bank lending rates, tax incentives, wage subsidies for youth engaged in agribusiness, and youth agribusiness engagement. The data were analyzed using advanced econometric techniques, including the Augmented Dickey-Fuller (ADF) unit root test to examine stationarity, the Autoregressive Distributed Lag (ARDL) Bounds Test to determine the existence of long-run relationships among the variables, and the Seemingly Unrelated Regression (SUR) model to estimate the interrelated effects of SME finance development policy instruments on youth agribusiness engagement. The ADF unit root test revealed that all variables became stationary after first differencing I(1). The ARDL Bounds Test further indicated the absence of a long-run equilibrium relationship among the variables. The SUR estimation results showed that bank lending rate exerted a significant negative effect on youth engagement in agribusiness ($\beta = -4.399$, $p < 0.001$), while the number of guaranteed loans ($\beta = 0.159$, $p = 0.011$), tax incentives ($\beta = 0.299$, $p = 0.040$), and wage subsidies ($\beta = 0.398$, $p = 0.015$) all had significant positive effects on youth engagement in agribusiness. The study concludes that well-designed SME finance development policies play a critical role in promoting youth participation in agribusiness. It therefore recommends reducing commercial lending rates to single-digit levels and expanding government-backed loan guarantee schemes.

Keywords: SMEs Policies, Finance, Agribusiness, Youth-engagement

41. Perceived Effects of Utilization of Climate-Smart Agricultural (CSA) Practices among Cassava Farmers in Southeast, Nigeria

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Abstract

This study assessed the perceived effects of utilization of Climate-Smart Agricultural (CSA) practices among cassava farmers in Southeast, Nigeria. The study utilized multistage sampling procedure in the selection of 180 cassava farmers. Questionnaire was the main tool for data collection. Percentage, mean-score and regression analysis were employed for data analysis. Findings revealed that all (100%) the cassava farmers were aware of CSA practices. Mixed cropping (98.33%), mulching (96.11%), adjusting planting date (93.33%) among others were the CSA practices identified by the cassava farmers. Finding revealed high level of utilization of adjusting planting date (mean=3.18, SD=0.90), mixed cropping (mean=3.16, SD=0.88), use of organic manure (mean=3.11, SD=0.83) and mulching (mean=2.87, SD=0.76) CSA practices among cassava farmers. Farmers perceived reduced greenhouse gas emission (mean=3.09, SD=0.84), environmentally friendly (mean=3.23, SD=0.94), food security (mean=2.92, SD=0.75) among others as the effects of CSA. But utilization was constrained by high cost of labour (95.56%), poor access to extension services (80.56%) among others. The study concluded that the utilization of CSA practices significantly enhances cassava production and strengthens farmers' adaptive capacity to climate change. The study recommends that the Government should subsidize labour cost-saving machines like hand-operated mowers.

Keywords: climate smart, perceived effects

42. Principal Component Analysis in Contemporary Agricultural Research and Innovation: Unlocking Insights for Sustainability Strategies of Rice Production in South East Nigeria

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Abstract

Contemporary agricultural systems are undergoing a profound digital transformation, characterized by the deployment of Internet of Things (IoT) sensor networks, high-throughput genetic phenotyping platforms, and multi-spectral satellite remote sensing. While these innovations generate massive arrays of agronomic data, they simultaneously introduce severe analytical bottlenecks due to high dimensionality and pervasive multicollinearity among biophysical variables. This paper examines the application of Principal Component Analysis (PCA) as an essential unsupervised machine learning methodology for optimizing data architecture and generating actionable insights in modern agricultural research. By executing an orthogonal transformation of high-dimensional standardized data matrices, PCA effectively condenses redundant and overlapping environmental, socioeconomic, and physiological variables into a reduced set of uncorrelated principal components while preserving maximum variance. Drawing from recent empirical applications, the paper demonstrates how PCA and its extensions, including Kernel PCA (KPCA), Sparse PCA (SPCA), and Robust PCA (RPCA), support soil quality assessment, crop yield forecasting, precision agriculture, and sustainable resource management. An empirical illustration from rice production sustainability strategies in South East Nigeria showed the effectiveness of PCA in identifying critical dimensions influencing sustainable production. The analysis confirmed data suitability through a KMO value of 0.778 and significant Bartlett's test ($\chi^2=804.783$; $p<0.01$), extracting four major strategic components: economic and socio-cultural, institutional, environmental, and infrastructural strategies. The findings revealed that improved production practices, access to quality inputs, financial support, timely farm operations, and rural infrastructure development are key pathways for enhancing rice sustainability. Ultimately, this paper highlights PCA not merely as a data reduction technique but as a strategic analytical tool for uncovering complex relationships within agricultural systems and supporting evidence-based innovations for sustainable productivity and food security.

Keywords: Principal Component Analysis, Factor Analysis, Agricultural Innovation, Sustainable Productivity, Rice Production, Data-Driven Agriculture

43. Utilization of Organic Farming Practices among Arable Crop Farmers in Ikwuano Local Government Area of Abia State, Nigeria

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Abstract

This study examined the utilization of organic farming practices among arable crop farmers in Ikwuano Local Government Area of Abia State, Nigeria. Specifically, it described the farmers' socio-economic characteristics, identified the organic farming practices utilized, assessed the extent of utilization, examined factors influencing utilization, and identified the constraints limiting effective adoption. A multistage sampling technique was used to select 80 arable crop farmers from selected communities. Primary data were collected using a structured questionnaire and analysed using descriptive statistics, including frequency counts, percentages, and mean scores, while multiple regression analysis was employed to determine the influence of socio-economic characteristics on the utilization of organic farming practices. The findings showed that commonly utilized practices included the application of animal manure, composting, mulching, crop rotation, intercropping, green manuring, and biological pest control, although the level of utilization was generally moderate. The results further revealed that age, educational level, farming experience, farm size, extension contact, income, and cooperative membership significantly influenced the utilization of organic farming practices. Major constraints included inadequate extension services, labour-intensive operations, limited availability of organic inputs, inadequate technical knowledge, poor access to credit facilities, and weak institutional support. The study concluded that despite farmers' awareness of organic farming practices, their utilization remains constrained by socio-economic and institutional factors. It therefore recommends strengthening extension services, expanding farmer training programmes, improving access to affordable credit and organic inputs, encouraging cooperative participation, and implementing policies that promote sustainable organic farming. These measures will enhance the adoption of organic farming practices, improve agricultural productivity, support environmental sustainability, and contribute to food security.

Keywords: Utilization, Organic Farming, Arable Crop, Farmers

44. From Farm to Phone: Effects of Digital Marketplace Adoption on Smallholder Farmers' Livelihoods in Abia State, Nigeria: Evidence from Propensity Score Matching

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Abstract

Digital marketplaces are increasingly positioned as a route out of the intermediary-dominated marketing chains that constrain smallholder incomes in Nigeria, yet uptake remains uneven and its livelihood consequences are not well quantified at the local level. This study integrates the Technology Acceptance Model with the Sustainable Livelihoods Framework to examine digital marketplace adoption and its livelihood effects among 120 smallholder farmers across three agricultural zones of Abia State, Nigeria. A mixed-methods explanatory design combined a structured survey with focus group discussions and key informant interviews. Adoption was modelled using Firth's penalized logistic regression, a method required because standard maximum likelihood failed under complete separation in the data, and livelihood impact was estimated using kernel-based Propensity Score Matching (PSM) with a full-procedure bootstrap. The model examined digital literacy, perceived usefulness, smartphone access, extension contact, years of formal education, and rural or urban location as predictors of adoption. Findings show 58.3% awareness and 35.0% adoption of digital marketplaces. Smartphone access, extension contact, and awareness were necessary but not individually sufficient conditions for adoption; of all predictors tested, only digital literacy emerged as an independent, statistically significant predictor of adoption ($p = 0.005$), with perceived usefulness marginal ($p = 0.104$). Neither years of formal education nor rural/urban location reached statistical significance once digital literacy was accounted for. Matched adopters earned approximately 41.8% more than comparable non-adopters ($p < 0.001$), alongside significantly greater buyer access, price-negotiation confidence, and market reach. The paper concludes that digital literacy is the binding constraint on digital marketplace adoption in Abia State, and that closing this constraint could deliver a substantial, statistically well-supported livelihood premium.

Keywords: digital agriculture, technology acceptance model, smallholder farmers, livelihoods, propensity score matching, Abia State

45. Effect of digital Extension Services on Cassava Farmers Education in Abia State, Nigeria

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Abstract

This study was done to identify digital extension services available for training cassava farmers in Abia State, and ascertain their effect on cassava farmers' extension education. Multistage random sampling was employed to select a sample of 100 ADP contact farmers for the study. The list of cassava-based ADP contact farmers in the state served as sampling frame. Data were collected, using a structured questionnaire. Objectives i and ii were realized using frequencies, percentages and means. The perception questions on the Four-Point Likert Rating Scale were stated and scaled as strongly agree (4), agree (3), disagree (2) and strongly disagree (1), with a mean score of 2.5. The result of objective 1 shows that the digital extension services available to the farmers are WhatsApp, video conferencing, Facebook, Instagram, YouTube and zoom meeting. The result of objective 2 shows that the digital extension services are effective in increasing cassava farmers' extension education, with a grand mean score of 3.02. For instance, it resulted in increase in farmers income (mean =3.49), increase in production (mean =3.47), enhancing learning ability (mean =3.45), improving knowledge of cassava production (mean =3.22), giving them up to date information on improved cassava production technologies (mean =3.14) and providing relevant information to them (mean =2.52). This result implies that digital extension services have positive effect on extension education of the farmers. Increased digitalization of extension services was recommended as a means to boost cassava production through increase in the effectiveness of farmers' extension education.

Keywords: Effect, Digital, Extension, Services, Education, Farmers

46. Analysis of Microfinance Services and Performance of Small-Scale Agribusiness Operators in Akwa Ibom State, Nigeria

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Abstract

Microfinance services are critical resources for enhancing the performance of small-scale agribusiness enterprises. However, many small-scale agribusiness operators in Akwa Ibom State have limited access to microfinance services, which constrains their performance. This study analyzed microfinance services and the performance of small-scale agribusiness operators in Akwa Ibom State, Nigeria. Specifically, the study identified the microfinance services available to them, assessed their enterprise performance using net income analysis, and determined the factors influencing net income using multiple regression models. A multi-stage sampling procedure was used to select 240 small-scale agribusiness operators. Primary data were collected using a structured questionnaire. Results showed that the major microfinance services available to the respondents were savings services, mobile banking, electronic fund transfer, agricultural credit, financial advisory services, and business training, while micro-insurance was the least available service. Small-scale agripreneurs recorded an average monthly net income of ₦329,683.50, indicating that small-scale agribusiness enterprises were lucrative and economically viable. Education ($p<0.01$), agribusiness experience ($p<0.01$), interest rate ($p<0.01$), amount of savings ($p<0.01$), and amount of credit ($p<0.01$) determined the net income of agripreneurs. The study recommended that government and relevant institutions should make micro-insurance services available and reachable to small-scale agribusinesses in order to protect them against production, market, and climate-related risks.

Keywords: Microfinance services, small-scale agribusiness, revenue, agricultural credit, saving mobilization.

47. Cassava Seedpreneurship, Gender Inclusion, and Smart Agricultural Development in Nigeria: A Review

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Abstract

Cassava (*Manihot esculenta* Crantz) is the world's leading root crop by production volume, with Nigeria ranking as the single largest producer at more than 60 million tonnes annually. Yet productivity remains low relative to Asia, and the informal planting-material system that most farmers rely on continues to constrain the uptake of improved, disease-resistant varieties. Cassava seedpreneurship which is the organized, entrepreneurial production and sale of certified stem cuttings -- has emerged as a promising model for closing this gap, with the NRCRI/IITA Building an Economically Sustainable Integrated Cassava Seed System (BASICS-II) project providing the institutional architecture for a network of Village Seed Entrepreneurs (VSEs) across several Nigerian states, including Imo State. Yet the business of producing and selling quality stems is not gender-neutral. Structural constraints - limited access to land, credit, extension services, and household decision-making authority - continue to shape a persistent role gap in which women dominate cassava cultivation and processing but remain under-represented in formal seed entrepreneurship. This paper reviews the conceptual, theoretical, and empirical literature bearing on cassava seedpreneurship and gender inclusion in Nigeria, drawing on the framework developed for an ongoing gender situation analysis in Imo State. It argues that gender-inclusive seedpreneurship is not merely an equity imperative but a smart agricultural production strategy: systems that activate the full pool of potential seed entrepreneurs, irrespective of gender, are more likely to build the resilient, distributed seed supply networks that green agricultural growth in Nigeria requires. The paper identifies persistent conceptual, empirical, and methodological gaps in existing literature and calls for policy and programme design that treats gender disaggregation as standard practice, not an optional addition, in cassava seed-system development.

Keywords: *cassava seedpreneurship; gender inclusion; smart agriculture; seed systems; Nigeria; green growth; farmer participation*

48. Effect of Food Security and Sustainability of Agribusiness Entrepreneurs in Abia State

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Abstract

This study investigated effect of food security and sustainability of agribusiness entrepreneurs in Abia State. The specific objectives are to analyze the performance level of agribusiness entrepreneurs in Abia State and examine the food security status of the agribusiness entrepreneurs in Abia State. This study adopted a cross-sectional research design. This study made use of primary data. This study adopted purposive sampling technique. This study selected 10 agribusiness entrepreneurs in Abia State. The study findings of the study stated that there is a positive relationship between performance level and agribusiness entrepreneurs in Abia State. There is a positive relationship between food security status and agribusiness entrepreneurs in Abia State. The study concluded that sustainable agribusiness entrepreneurship depends not only on the availability of food resources but also on the ability of entrepreneurs to adopt innovative technologies, implement climate-smart agricultural practices, improve managerial capabilities, and effectively utilize available resources. The study recommended that agribusiness entrepreneurs should adopt climate-smart and sustainable agricultural practices, including conservation agriculture, precision farming, integrated pest management, efficient water management, and the use of improved crop and livestock varieties. These practices will enhance productivity, ensure stable food production, and improve resilience to climate change.

Keywords: *Food Security, Sustainability, Performance Level and Agribusiness Entrepreneurs*