



PERCEPTIONS AND STRATEGIES FOR SUSTAINABLE AGRIBUSINESS ENTREPRENEURSHIP DEVELOPMENT IN NIGERIA: INSIGHTS FROM STAKEHOLDERS

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Abstract: Despite Nigeria's significant potential for agribusiness entrepreneurship, its agricultural productivity remains below regional and global averages, hindered by limited entrepreneurial competence, infrastructural deficits, and inconsistent policy frameworks. These challenges necessitate a focused investigation into stakeholder perceptions and strategies for overcoming internal and external barriers to agribusiness development and fostering sustainable practices that engage youth and drive economic growth. This study aims to assess the perceptions of stakeholders regarding the development of agribusiness entrepreneurship in Nigeria. The research involved two phases: first, identifying the internal strengths and weaknesses, as well as external opportunities and threats, perceived by stakeholders as major obstacles to agribusiness entrepreneurship development in Nigeria; second, gathering and analyzing stakeholders' opinions on the effectiveness of sustainable agribusiness development strategies. Using a qualitative approach, data were collected through 28 in-depth interviews, four focus group discussions, and interviews with key informants across four states: Kano, Benue, Cross River, and Oyo. Selected crops included rice, maize, yam, oranges, cassava, and palm oil. Major actors in agribusiness were engaged to provide insights into the sector's role in nutritional diets and income generation, particularly among youth. The study found that creating a favorable macropolicy environment, ensuring food safety and market supply consistency, enhancing human capacity, improving access to finance, and strengthening research capacity are crucial for sustainable agribusiness development. These strategies align with institutional economics and market failure theory, emphasizing the importance of supportive policies and quality control. The findings underscore the need for collaborative efforts between the public and private sectors to create an enabling environment for agribusiness entrepreneurship, aiming to boost productivity, competitiveness, and profitability while addressing economic and societal challenges.

Keywords: Sustainable agribusiness; Entrepreneurship; SWOT; Agrotourism; Rural infrastructure, Qualitative analysis

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Received: July 13, 2024

Accepted: February 19, 2025

Published: May 15, 2025

Cite as: Ikuemonisan ES. 2025. Perceptions and strategies for sustainable agribusiness entrepreneurship development in Nigeria: Insights from stakeholders. BSJ Agri, 8(3): 323-334.

1. Introduction

The challenge of addressing global food security is paramount, especially in low-income countries facing rapid population growth. By 2050, the world's population is projected to reach 9.7 billion, with a significant portion experiencing food insecurity. Sub-Saharan Africa, in particular, has severe food access issues, especially among children. Despite global food production being adequate, inefficiencies in value chain systems, notably in low-income nations, obstruct food distribution, contributing to hunger (Xie et al., 2021). In this context, agribusiness entrepreneurs play a crucial role in identifying opportunities within agriculture to achieve sustainable food production and distribution, particularly in sub-Saharan Africa.

Agribusiness entrepreneurship has garnered increasing attention due to population growth and limited alternative employment opportunities in the region. However, it faces substantial challenges such as limited access to capital, inadequate infrastructure, and

inconsistent policy frameworks. Scholarly research has increasingly focused on evaluating the current landscape, identifying gaps, and offering insights for policymakers (Payumo et al., 2017; Olaoye, 2014). Nigeria, a significant player in agricultural income, struggles with lower productivity compared to regional and global averages, attributed to various factors such as natural conditions and a lack of agribusiness entrepreneurial competence (USDA-Economic Research Services, 2022).

Scholars have identified key determinants influencing agricultural productivity, including technology, physical and natural resources, and human capital. Human capital, in particular, plays a pivotal role in transforming these resources into actionable forms that drive business and economic growth (Ndour, 2017). Agribusiness entrepreneurship integrates this concept, focusing on leveraging innovative technological capital to optimize production while minimizing environmental impact. This managerial competency is vital for boosting productivity, especially in countries with above-average agricultural



performance (Escalante et al., 2006).

The adoption of entrepreneurial concepts along agricultural value chains is linked to increased productivity and growth imperatives for small agribusiness enterprises. This necessitates the adoption of disruptive innovation frameworks and youth engagement in agriculture (Markides, 2013; Christensen et al., 2015). In the context of Nigeria, where soil quality varies, agribusiness entrepreneurship has significant economic growth potential (Regmi and Naharki, 2020). However, challenges persist, including elderly farmers' resistance to new technologies and climate change impacts (Ikueomonisan et al., 2024).

Agribusiness entrepreneurship research is driven by the need for cutting-edge innovations to improve and sustain agricultural business (Regmi and Naharki, 2020; Bairwa et al., 2014). Managerial capacity, encompassing traits such as drive, ambition, creativity, and problem solving, is crucial for launching and running successful farm and agribusiness enterprises (Bairwa et al., 2014).

1.2. Objective

This study aims to assess the perceptions of stakeholders

regarding the development of agribusiness entrepreneurship in Nigeria. The research process consisted of two phases. The first phase involves identifying the internal strengths and weaknesses, as well as external opportunities and threats, perceived by stakeholders as major obstacles to agribusiness entrepreneurship development in Nigeria. This information will be valuable in formulating future strategies for engaging young people in this field. The second phase involves gathering and analysing stakeholders' opinions on the effectiveness of sustainable agribusiness development strategies in Nigeria. The research questions for this study are as follows: 1) What are the primary concerns of stakeholders regarding the internal and external factors that impact the development of agribusiness entrepreneurship in Nigeria? 2) What do stakeholders in the agricultural sector think about the feasibility of implementing global agribusiness practices and strategies for fostering sustainable agribusiness development in Nigeria?

Table 1 provides an explanation of the research questions listed to achieve the objectives of the study.

Table 1. Explanation of research questions*

S/N	Leverage Points	Research Questions
1	Strength	i. What advantage (strength) does Nigeria have over other countries in agriculture? ii. How strong is Nigeria's institutional framework for achieving sustainable agriculture and competitive agribusiness?
	Weakness	i. What characteristics (weaknesses) are impeding agribusiness entrepreneurship in Nigeria? ii. In which area (of weakness) does Nigeria need to improve in order to boost agricultural productivity?
	Opportunities	i. What agricultural products from Nigeria are in high demand both locally and internationally (opportunities)? ii. Can Nigeria sustain a steady increase in agricultural production while maintaining a competitive advantage (opportunity for expansion)?
	Threats	i. Is there any risk or difficulty in exploring these agribusiness opportunities in Nigeria? ii. What factors/issues are causing people to miss out on agribusiness opportunities?

*Source= compiled by author, 2023.

The other sections of the paper are organized as follows: after discussing agribusiness model innovation, section two discusses the materials and methods, section three discusses the results and discussion, section four discusses the discussion, and section five discusses the conclusion and recommendations

1.3. The New Concept in Agribusiness

The emerging trend in agribusiness involves a re-evaluation of value generation, urging companies in the agri-food industry to move beyond a manufacturing-centric role. Participants often perceive themselves as manufacturers rather than innovators, leading to a tendency to overlook the need for a sustainable business model, which is crucial for future growth. The evolving focus emphasizes a dynamic understanding of value creation, urging active involvement and innovation

throughout the entire value chain. Neglecting a resilient business model is identified as a critical oversight that potentially impedes enduring growth. This shift underscores the evolving nature of agribusiness, urging firms to adopt a comprehensive and forward-thinking approach beyond traditional manufacturing roles.

The potential of agritourism as an alternative for boosting the economies of developing countries is often highlighted, with its strong association to various sustainability benefits (Ndhlovu and Dube, 2024). According to Lane (2009), this model can promote the sustainable growth of rural areas by allowing farms to remain productive despite facing socio-economic and environmental difficulties. Its value extends beyond financial gains to include job creation, fostering community pride, and motivating farmers to embrace

innovative business practices within local economies (Lane, 2009). Agritourism is defined by the reconnection between producers and consumers, driven by broad ethical and political objectives such as revitalizing local identities, strengthening rural community ties to agriculture and local foods, fostering sustainable agricultural practices, and promoting both economically viable and socially responsible approaches (Ammirato et al., 2020). Barry and Hellerstein (2004) noted that agritourism offers both economic and social benefits while being ecologically advantageous, as it supports tourism that respects the natural environment, cultural traditions, and the economic needs of specific.

Nigeria, endowed with abundant agricultural and human resources, must establish a framework conducive to agribusiness entrepreneurship, facilitating innovative and cost-effective approaches to deliver and capture value. This approach is pivotal for agribusiness entrepreneurs to play vital roles in addressing global challenges, exploring new opportunities, and adapting to evolving consumer behaviours, constituting the essence of the new deal for the agribusiness concept.

According to the Harvard Business Review, this new deal pertains to efficiently delivering traditional goods to current markets without requiring entirely novel inventions or sectors. This concept has transformative potential for distressed economies, reshaping agri-food systems and contributing significantly to economic prosperity. Embracing the new deal allows food firms to carve a distinctive niche, often involving subtle modifications that offer unique, hard-to-imitate benefits in the industry. To thrive internationally, agri-firms need an organically structured agribusiness concept capable of responsive adaptation to new inventions, a gap existing in Nigeria's current agricultural education curriculum (Ikuemonisan et al., 2022a).

Any agri-firm that wants to be relevant in the international market and grow sustainably must have an organically structured agribusiness concept that can adequately respond to new inventions on a regular basis. However, Nigeria's current agricultural education curriculum does not adequately address this issue.

2. Materials and Methods

2.1. Study Area, Sampling Technique, and Data Collection

The primary aim of this research was predominantly exploratory in nature, making it well suited for qualitative methodology (Corbin and Strauss, 2015; Cohen et al., 2018; Saunders et al., 2019). The approach to the study is qualitative, and data were gathered over a period of three months through a series of 28 in-depth interviews. Four focus group discussions (FGDs) and interviews with key informants (KIs) were conducted in the agribusiness subsector in Nigeria. Two states were randomly selected from the north (Kano and Benue States), and two states were selected from the south (Cross River and Oyo States). Based on the given criteria

of nutritional values, gender inclusiveness and participation, youth empowerment, marketability, and socioeconomic values, one agricultural crop was selected for each state. The selected crops were rice and maize for Kano State, yam and oranges for Benue State, cassava and palm oil for Cross River State, and maize and cassava for Oyo State.

Major actors in the various agribusiness groups in the selected states were invited for interactions, including owners of commercial farms, agricultural exporters, participants in agricultural value chains, agricultural input dealers, agricultural service providers, smallholder farmers, farm equipment fabricators, agricultural traders, agricultural produce processors, and policymakers. The following locations were selected for interactions with stakeholders (FGDs and KIs): Kure in the Kure Local Government Area (Kano State), Zaki Biam Yam Market in the Ukum Local Government Area (Benue State), Obubra in the Obubra Local Government Area (Cross River State), and Oke Ogun in the Oke-Ogun Local Government Area (Oyo State).

The interviews were conducted at different locations within each state.

An interview protocol consisting of open-ended questions and probing inquiries was developed to guide the interviews. Participants were provided with a clear definition of agribusiness entrepreneurship before the interviews to establish a common understanding.

The focus group discussions and key informant interviews aimed to gain insight into the potential role of the agricultural sector for nutritional diets and increased income generation, particularly among youth involved in agribusiness opportunities along the value chains of the selected crops. The research followed a theoretical sampling approach, initially employing purposive nonprobability sampling and then including additional cases based on their theoretical relevance. A total of 363 individuals participated in the focus group discussions, and 36 key informants were interviewed.

The distribution of respondents by age and gender revealed that 20% were between the ages of 25 and 35, with 42% female and 58% male participants in the focus group discussions. Six participants from each state were chosen as key informants based on their level of participation in the focus group discussions.

Table 2. Distribution of respondents by stakeholder and sector activities*

S/N	Sector Activity	Respondents	Frequency
1	Input Supply	Private Seed Companies;	2
		From the Crop Protection Products Market	25
		From Fertilizer Market	5
		Government Input Supply Centres	12
2	Production	Farmers without land titles	36
		Subsistence Farmers with land title (<1ha)	21
		Smallholders Farmers with land title (1 – 3ha)	44
		Commercial Farmers with land title (>3ha)	5
3	Trading	Farmers' Group	18
		Wholesalers/Exporter	10
		Middlemen	18
		Retailers	22
4	Marketing/Selling	International Market	1
		National Market	10
		Regional Market	15
		Urban Market	11
5	Service	Supermarket	3
		Local Market	14
		Online Market	10
		Private	11
6	Prospective Trainees	Public	15
		Students	24
		Unemployed Graduates	31

*Source= computed from field survey, 2022.

To address objective 2, a list of global agribusiness practices and strategies for fostering sustainable agribusiness development was generated based on an extensive review of relevant literature, and journal articles, research papers, annual reports, theses, books, survey reports, and stakeholders (respondents) were asked to assess the relevance of these practices to agribusiness development. Second, an evidence-based assessment of the internal (strengths and weaknesses) and external (opportunities and threats) factors that can shape agribusiness entrepreneurship in Nigeria was conducted.

2.2. SWOT Analysis Framework

The SWOT analysis framework provides a structured approach to organize and analyse the data collected from stakeholders. The framework was designed to address specific research questions related to internal and external factors influencing agribusiness entrepreneurship development in Nigeria.

2.3. Strength and Weakness of the Methodology

The research methodology's strengths lie in its alignment with the study's exploratory objectives, leveraging qualitative approaches such as in-depth interviews and focus group discussions to capture nuanced stakeholder perceptions. Its diverse data collection methods, including key informant interviews and theoretical sampling, ensure a rich and triangulated dataset. Geographic and demographic diversity is achieved by involving stakeholders across northern and southern Nigeria, representing a wide range of agribusiness activities and addressing variations in regional

challenges. Additionally, the integration of literature to evaluate global agribusiness practices contextualizes the research within both local and international frameworks, enhancing its relevance.

However, the study's reliance on purposive nonprobability sampling raises concerns about potential bias and the exclusion of diverse regional challenges. The absence of quantitative methods limits the generalizability of findings, while reliance on self-reported data risks subjective inaccuracies. The focus on specific crops restricts the comprehensiveness of the analysis, potentially overlooking other critical sectors. Furthermore, the three-month data collection period may not account for seasonal variations, and the lack of clarity in evaluating global strategies could hinder the reproducibility and applicability of the findings.

2.4. Statistical Analysis

This study utilized qualitative research methods, specifically focus group interviews, to collect a substantial amount of data on the strengths, opportunities, weaknesses, and threats to the development of agribusiness in Nigeria and the 24 global agribusiness practices and strategies that were presented to the respondents during the interaction. To manage these data effectively, the analysis process followed a structured approach based on Krueger's (1994) framework analysis, supplemented by key stages from Ritchie and Spencer's (1994) framework. This combined approach offered clear steps for both novice and experienced researchers to navigate the complexity of qualitative data analysis.

The analysis process consisted of several key stages:

Familiarization: This stage involved immersing in the data by listening to tapes, reading transcripts multiple times, and reviewing observational and summary notes. The goal was to gain a comprehensive understanding of the interviews before breaking them down into parts.

Identifying a Thematic Framework: The next step was to identify themes by writing memos in the margin of the text, capturing short phrases, ideas, or concepts emerging from the data. This process helped in developing categories and forming descriptive statements based on the research questions.

Indexing: Data were sifted, highlighted, and sorted to extract relevant submission and make comparisons within and between cases. This stage focused on managing data by cutting and pasting similar quotes together, leading to data reduction.

Charting and Triangulation: The extracted submissions were rearranged under appropriate thematic content. This process involved lifting submissions from the discussants' original context and organizing them based on the thematic framework developed earlier. Additionally, triangulation was adopted to compare the data obtained from the literature, informants, and discussants in the group discussion.

Mapping and Interpretation: The final stage involved interpreting the data by making sense of individual submissions and identifying relationships and links between data points. Krueger (1994) established criteria, such as words used, context, internal consistency, frequency, specificity, intensity of comments, and big ideas, to guide the interpretation process.

Following this systematic and sequential approach to data analysis, the study aimed to ensure the dependability, consistency, and conformability of the data, enhancing the overall quality and rigor of the research findings. Keeping reflective diaries, maintaining observational notes, and utilizing audiotapes or videotapes also contributed valuable dimensions to the data analysis process.

2.5. Thematic Organization and Reporting of Findings

The findings from the SWOT analysis were thematically organized into four sections: strengths, weaknesses, opportunities, and threats, following the pattern suggested by Regmi and Naharki (2020). This thematic organization facilitated a comprehensive presentation of the research findings and allowed for a deeper exploration of each aspect of the SWOT analysis.

2.5.1. Reporting Findings

Table 3 presents the summarized findings of the SWOT analysis, highlighting the agreement among respondents on key research questions related to strengths, weaknesses, opportunities, and threats in agribusiness entrepreneurship development in Nigeria. The responses were obtained through a combination of FGDs and key informant interviews, ensuring a diverse range of perspectives and enhancing the credibility and applicability of the research findings.

2.5.2. Interpretation and Discussion

The sections following table 3 delve into the interpretation and discussion of the SWOT analysis findings. Each subsection corresponds to one of the SWOT categories (strengths, weaknesses, opportunities, and threats) and provides detailed insights derived from key informant inputs and relevant literature.

3. Results

The importance of assessing both internal (strengths and weaknesses) and external (opportunities and threats) factors is to enrich the literature on agribusiness on the one hand and to stimulate the business community for long-term scientific actions and business-oriented investment in agribusiness on the other. The pattern for thematically organizing and reporting the findings in this study is provided by Regmi and Naharki (2020). The findings of this study's SWOT analysis on Agribusiness Entrepreneurship in Nigeria are presented in four sections: Strengths, Weaknesses, Opportunities, and Threats.

3.1. SWOT analysis

Table 3 presents the agreement among respondents regarding the key research questions they were presented with. Notably, the substantial agreement and consistency observed in the responses from both the participants in the Focus Group Discussion (FGD) and the Key Informants strongly support the accuracy and broader applicability of the research findings (Flick, 2014). Previous research identified four leverage points—strength, weakness, opportunities, and threats—as well as associated research questions. The respondents were allowed to make subtle comments to the questions in table 3 based on their experiences in their respective local agribusiness environments. Table 4 provides a summary of the responses.

Table 3. SWOT analysis*

<p>Strength</p> <p>i. What competitive advantage (strength) does Nigeria have over other countries in Agribusiness Entrepreneurship?</p> <p>ii. What is the current state of the institutional framework (strength) in Nigeria for achieving competitive and sustainable agricultural value chains?</p> <ul style="list-style-type: none"> ● 43.3 million hectares of agricultural land spread across complementary agro ecological zones to support massive agricultural production. ● Enormous, energetic, ingenious, active, and mobile youth population (54%) with a projected population of 262 million in 2050. ● Potential for growth and stability as a member of N-11 countries. ● Indigenous and traditional knowledge ● Plant Biodiversity influenced by enormous anthropogenic forces and floral diversity (A function of Organic residues) ● Plant Biodiversity influenced by enormous anthropogenic forces and floral diversity (A function of Organic residues) Government institutions are available to develop the agribusiness subsector through various government agencies such as the Ministry of Agriculture, the Ministry of Commerce and Industry, the Central Bank of Nigeria, Small, and Medium Development Agency (SMEDAN). ● Institutional Policy Framework for Managing Risk in Agriculture. 	<p>Weakness</p> <p>i. What characteristics (weaknesses) are impeding agribusiness entrepreneurship in Nigeria?</p> <p>ii. In which area (of weakness) does Nigeria need to improve in order to boost agricultural productivity?</p> <ul style="list-style-type: none"> ● The upstream sector is dominated by traditional agricultural actors. ● Low penetration (adoption) of technology and, as a result, low productivity. ● Farm mechanization is hampered by difficult farm landscape terrain. ● Inadequate technological solutions to agricultural and related issues ● General perception of agricultural drudgery ● Lack of understanding and incentives to start an agribusiness a general perception of agricultural drudgery ● Lack of understanding and incentives to start an agribusiness ● Lack of infrastructure (storage, transport, etc.) ● Postharvest losses and agricultural products with low added value ● Inadequate education and information on export management and international agribusiness; ● Inadequate education and information on export management and international agribusiness; ● Insufficient access to quality data for making informed agribusiness decisions. ● Weak judicial system ● Agribusiness corridor that is unorganized and unregulated agribusiness corridor.
<p>Opportunities</p> <p>i. What agricultural produce/products from Nigeria are increasingly in demand in both the domestic and international markets (opportunities)?</p> <p>ii. Does Nigeria have the capacity to sustain a consistent increase in agricultural production while maintaining a competitive advantage (opportunity for expansion)?</p> <ul style="list-style-type: none"> ● Commercial production of cassava, yam, cocoyam, cereals, cocoa, plantains, oil palm, and agricultural products (Comparative Advantage) ● Agrotourism destinations, both natural and man-made ● Significant domestic and international market (free trade). ● Good bilateral relationships that can aid in the promotion of agribusiness ● Institutions of higher learning where improved and market-driven agribusiness entrepreneurship and other related courses can be taught. ● Agriculture research institutes that promote new agricultural innovations. ● Enormous amounts of foreign exchange from crude oil can be used to fund agricultural research institutes and new agribusiness innovations. ● Increasing international organization support, such as CIDA, FAO, World Bank, AfDB, and others. ● Growing opportunity for virtual businesses 	<p>Threats</p> <p>i. Is there any risk or difficulty in exploring these agribusiness opportunities in Nigeria?</p> <p>ii. What factors/issues are causing people to miss out on agribusiness opportunities?</p> <ul style="list-style-type: none"> ● Insecurity and recurring conflicts ● Low insurance uptake by actors in agricultural value chains as a result of social stigma and insufficient motivation ● Skill gaps, particularly in the development of new products and modern marketing strategies ● Education in modern agriculture and agribusiness is of poor quality. ● Lack of adaptable and inclusive industry-linked pedagogy to train the next generation of competitive agribusiness entrepreneurs. ● Ineffective climate change management strategies ● Lack of irrigation infrastructure Deforestation Pests and diseases ● There is an overemphasis on the upstream sector, with little or no attention given to the midstream and downstream agribusiness sectors. ● Lack of knowledge about export buses; industrial expansion; and a lack of start-up capital.

*Source: Compiled from field survey, 2023.

3.1.1. Strengths

The strengths identified in Nigeria's agribusiness landscape, such as climate suitability, agricultural land suitability, agro-ecological niches, rich plant biodiversity, government prioritization of the sector, and the institutional policy framework, are intricately connected to broader challenges and opportunities within the country's agribusiness sector. Integrating these findings with the theoretical frameworks of Krueger (1994) and Ritchie and Spencer (1994) provide a deeper analysis of these connections.

Nigeria has a strong advantage in terms of climate suitability and agricultural land suitability. The country's diverse climatic regions provide favourable conditions for growing a wide range of crops, giving Nigeria a comparative advantage in farming. This diversity also attracts immigrants to the country. However, despite these advantages, Nigeria's agricultural productivity is currently low, indicating the underutilization of agricultural factors such as land and capital. This low productivity is attributed to factors such as the lack of mechanized agricultural systems and low technological adoption. Overall, Nigeria's climate suitability and diverse agricultural land offer great potential for farming, but there is a need to address the challenges that hinder productivity (Poudel, 2016; USDA-Economic Research Services: International Agricultural Productivity, 2022).

Nigeria also possesses rich plant biodiversity, which presents business potential due to the combination of species and ecologies. Although plant diversity in Nigeria is not fully known, the country is home to a wide range of bird species, reptiles, amphibians, and fish species. Nigeria accounts for only 0.7% of the Earth's surface area, but it has diverse biodiversity and ecology, with over 900 bird species, 135 reptile species, 109 amphibian species, and 648 fish species (Altiparmak, 2022). Nigeria's biodiversity is unique and has high business potential due to the combination of species and ecologies (Luiselli, 2003; Ugochukwu, 2008).

The agro-ecological niches in Nigeria's different climatic zones offer opportunities for specific commodity production and agribusiness. The types of crops and animals raised in each region are determined by Nigeria's agroecological niche. Different ecological zones have their own specific commodities and potential for agribusiness entrepreneurship. Modern innovations in the value chains of these crops can enhance agribusiness opportunities for young entrepreneurs. For example, the savanna zone is suitable for crops such as cowpeas and soybeans, while the drier Sahel and Sudan savanna zones are suitable for drought-tolerant crops such as corn, groundnut, sorghum, and millet. The climatic belt of the savanna zone is also known to be the natural habitat for various tree species. The concept of thematic frameworks is used to categorize crops and livestock based on their suitability for different ecological zones. Integrating modern innovations along these value chains aligns with an entrepreneurial approach, encouraging farmers to

adopt innovative practices and enhance productivity.

The concept of thematic frameworks, as outlined by Krueger (1994), was applied here to categorize crops and livestock based on their suitability to different ecological zones. For instance, crops such as maize and rice thrive in monsoon regions, while millet and sorghum are more suitable for drier savanna zones. Integrating modern innovations along these value chains aligns with the entrepreneurial approach advocated by both frameworks, encouraging farmers to adopt innovative practices and enhance productivity.

The government's prioritization of the agricultural sector, as highlighted in the study, reflects a strategic shift towards commercialized agriculture and holistic agricultural development. This aligns with Krueger's framework, emphasizing the role of external factors such as government policies in shaping business environments. The Agricultural Promotion Policy (APP) serves as a roadmap for increasing agricultural input and output, fostering local and global market competitiveness, and promoting entrepreneurship within the sector.

The state of the agri-food system in Nigeria has undergone transformation in recent years due to factors such as population growth, urbanization, environmental consciousness, and changing occupational profiles. The government plays a crucial role in ensuring consistent production and food supply through interventions such as the supply of certified seeds, fertilizers, and funds for agricultural value chains. To manage agricultural risk, the Nigerian government has implemented institutional policies such as the Nigeria Agricultural Insurance Corporation (NAIC), which provides indemnity to farmers and covers a wide range of commodities. Premium subsidies are available for most agricultural insurance funded by federal and state governments. In terms of future prospects, the demand for agricultural products in Nigeria is expected to be influenced by agro-industrial demands, increased food demand driven by population growth and rising income.

3.1.2. Weaknesses

The weaknesses identified in agribusiness entrepreneurship in Nigeria are intertwined with several dimensions, including land holding, infrastructure, competitiveness, trade, research and development, knowledge transfer, and a weak justice system. The decline in per capita land holdings over time reflects a reduction in agricultural land availability, influenced by various socioeconomic, cultural, and political factors. These complexities hinder the development of agribusiness in Nigeria, as supported by Oluwatayo et al. (2019) and other scholars who cite environmental degradation as a significant threat to agricultural productivity.

Furthermore, high overhead costs due to inadequate power supply and limited access to cheap energy sources were highlighted as concerns by respondents. This issue is exacerbated by the lack of implementation of smart

energy solutions in rural areas, which impacts the sustainability of agro-ecosystems. Integrating these findings with the theoretical framework underscores the challenges faced in agribusiness development in Nigeria, particularly in terms of land availability, infrastructure, and energy sustainability. Addressing these weaknesses is crucial for enhancing the competitiveness and sustainability of agribusiness ventures in the country.

3.1.3. Opportunities

3.1.3.1. Pre-Farm (Input), Farm and Post-Farm (Processing) and Marketing Segments

The opportunities identified in Nigeria's agriculture sector align with broader agribusiness challenges and prospects. The sector offers avenues for business expansion, rural employment, income improvement, and poverty reduction if a new orientation emphasizing a favourable business climate is adopted (FAO, 2022). However, existing agricultural structures and programs lack integration with national goals, leading to a decline in employment within the sector and heavy reliance on agricultural imports due to low productivity among subsistence farmers (Cohen et al., 2018; Dzimba and van der Poll, 2022).

The theoretical framework supports these findings by highlighting the importance of productivity-driven innovations and efficient production and supply chains in enhancing agricultural output and job creation (Krueger, 1994). Integrating the results with the theoretical framework underscores the need for agribusiness entrepreneurs to focus on producing crops in which Nigeria has a comparative advantage, such as wheat, sugar, fish, milk, sesame, cashew nuts, cocoa beans, ginger, frozen shrimp, and cotton (Ritchie and Spencer, 1994). Optimizing resource use, including labour and land, is crucial for achieving increased productivity and competitiveness in the global agricultural market (FAO, 2022).

Furthermore, FAOSTAT data indicate that Nigeria has the potential to become a major player in trading various crops globally, including roots and tubers, cassava, yams, cereals, vegetables, fruits, oil palm, maize, and sorghum (FAO, 2022). However, this can only be realized through the adoption of productivity-driven innovations and efficient resource utilization across agricultural value chains (Krueger, 1994). Addressing these opportunities in line with the theoretical framework can contribute significantly to overcoming agribusiness challenges and harnessing Nigeria's agricultural potential.

3.1.3.2. Agrotourism

The potential of agrotourism in Nigeria intersects with broader agribusiness challenges and opportunities, offering a promising avenue for economic growth and development. Scholars and industry experts have highlighted Nigeria's substantial economic potential from agrotourism (Nnadi and Akwiwu, 2005; Khidir, 2020). This perspective suggests that leveraging the tourism sector could address the economic challenges faced by Nigeria and its citizens (Adebayo and Butcher, 2020;

Banki and Ismail, 2015).

Khidir (2020) defines agrotourism as a platform for encouraging engagement in agricultural activities and fostering physical development. Data from the Bureau of Statistics indicate that the contribution of the tourism sector to Nigeria's aggregate gross domestic product fluctuated between 2.8% and 4.5% between 2019 and 2020. As of 2021, it stood at 3.6%, and the buck of this this came from travel tourism. According to entrepreneurs in this sector, the conversation is still about how to help the government create an enabling environment so that doing business in the sector is easier. This call is based on the fact that agrotourism can be used to boost the branding of local, organic, and traditional products, as well as the development of rural entrepreneurship and the creation of job opportunities in many rural areas, where rural unemployment is expected to reach 33% by 2022.

3.1.4. Threats

Agribusiness entrepreneurs in Nigeria encounter a myriad of challenges that intersect with broader economic and environmental issues, particularly prevalent in sub-Saharan Africa. Climate change poses a significant challenge to agricultural productivity and sustainability (Ogidi, 2014; Raimi et al., 2021; Pratt et al., 2022). Additionally, the government's failure to establish an enabling business environment hinders entrepreneurship and economic growth (Regmi and Naharki, 2022).

Unorganized trade practices, price fraud, and market volatility further complicate agribusiness operations (Ikueomonisan et al., 2022b). These challenges contribute to a stagnant skilled migration rate, as professionals hesitate to seek opportunities abroad due to uncertainties and limitations within the domestic agribusiness landscape, thereby exacerbating the risk of brain drain.

In light of these challenges, agribusiness entrepreneurs in Nigeria must navigate complex operating environments while also capitalizing on emerging opportunities. Integrating findings with theoretical frameworks can provide insights into strategies for mitigating challenges and leveraging opportunities for sustainable agribusiness development.

3.2. Respondents' Consensus to Strategies for Sustainable Agribusiness Development

Table 4 presents a detailed assessment of agribusiness development strategies in Nigeria, highlighting a strong consensus among stakeholders regarding the urgent need for enhancing the agricultural industry (AI) through a comprehensive approach. This collective recognition underscores the vital importance of significant improvements in Nigeria's agri-food system to achieve efficiency and sustainability.

The theoretical framework supports these findings by emphasizing the role of government intervention, particularly through liberalization measures, in creating an enabling environment for sustainable agribusiness

development (Chao et al., 2022). Liberalization, involving market opening, reduced trade barriers, and increased competition, is seen as essential for fostering efficiency and sustainability in Nigeria's agri-food system.

Table 4 further outlines sustainable strategies that have garnered widespread agreement, with over 80% of stakeholders expressing consensus on these approaches. The consensus reaching processing (CRP) methodology, as developed by Chao et al. (2022), was employed to determine the levels of consensus among respondents. Out of the 24 global agribusiness practices and strategies

that were presented to the respondents during the interaction, only seven reported consensus levels of 80% and above.

These strategies, which have received increasing support from stakeholders, serve as key pillars for fostering sustainable agribusiness development in Nigeria. They represent a shared vision among stakeholders and provide a roadmap for policymakers and industry players to prioritize and implement to propel the nation's agribusiness sector towards a more sustainable and efficient future.

Table 4. Respondents' consensus of the assessment of strategies for sustainable agribusiness development in Nigeria*

S/N	Strategies	Approach	To be facilitated by
1	A favourable macropolicy environment must be created.	Appropriate monetary and fiscal policies to stabilize the value of the domestic currency	Central Bank of Nigeria
2	Declare and follow food safety and market supply consistency.	Marketing Freedom to show its support and commitment to the liberalization policy	Government and her agencies
3	Increase human capacity for agricultural development.	A framework for the facilitation of a consistent business and technical training assistance programme to scale up the required skills for actors along agricultural value chains.	Public Sector and Private Sectors
4	Increase access to credit and insurance	Access to finance and insurance for the development of agribusiness through a financial market in which agro-actors have high accessibility and penetration of finance outlets into rural areas.	Finance Institutions
5	Quality assurance for the supplied input	Low-quality input and output must be checked on a regular basis. As a result, quality control and anti-monopoly measures are unavoidable for a well-functioning agriculture industry.	Public Sector. Functioning Regulatory System
6	Transparency should be promoted in the agribusiness industry.	An MIS should be created to collect, analyse, and disseminate information about prices, deliveries, and stock levels at various locations.	Public Sector: Functioning Regulatory System
7	Increase research capacity for the promotion of private agro-companies, and Promote Technology Transfer activities.	Because modern agriculture is science-based, research institutes, universities, vocational centers, and so on must be strengthened, and industry-linked pedagogy developed.	Public & Private Sectors through NUC & NBTE.

*Source= author's compilation, 2023.

The findings from the survey among stakeholders in Nigeria's agribusiness industry reveal key strategies and approaches crucial for fostering sustainable development. These findings align with broader agribusiness challenges and opportunities in Nigeria and are supported by theoretical frameworks from the relevant literature.

A supportive macropolicy environment is identified by 96% of stakeholders as essential. This aligns with the literature emphasizing the need for strengthened agribusiness development capacity in sub-Saharan Africa (Babu et al., 2016). The Central Bank of Nigeria is recognized as a key facilitator for implementing this strategy.

Strict compliance with regulations for food safety and market supply consistency is stressed by approximately

82% of stakeholders. Balancing regulations and market freedom is highlighted in the literature as positively impacting market competition and economic growth (Gould et al., 1996; Nicoletti and Scarpetta, 2003). The government is seen as the facilitator for ensuring adherence to rules.

Third, enhancing human capacity for agricultural development is emphasized by approximately 89% of stakeholders. Investments in human capital are known to significantly contribute to increased agricultural productivity (Davis et al., 2021). Both the public and private sectors are recognized as facilitators, although issues of incompetence within the government system are noted (Dzimba and van der Poll, 2022; Kineber et al., 2023).

All stakeholders (100%) highlighted the need for

increased access to credit and insurance facilities, which are positively associated with higher agricultural productivity and economic growth (Phiri et al., 2022; Demirgüç-Kunt et al., 2017). Collaboration between the government and financial institutions is crucial for facilitating this strategy.

Close to 99% of stakeholders emphasize quality assurance in input supply, recommending quality control measures and antimonopoly regulations (Klerkx and Begemann, 2017). The public sector is identified as the facilitator of this strategy.

Additionally, more than 90% of stakeholders support transparency promotion in the agribusiness industry, aligning with the World Bank's proposal for a Management Information System (MIS) (Awotide et al., 2015). The public sector, particularly the functioning regulatory system, is recognized as the facilitator.

More than 85% of stakeholders support strategies focusing on research capacity and technology transfer activities in private agro-companies. The literature supports this, linking investments in research and development to increased agricultural productivity (Alene et al., 2013; Graziano da Silva et al., 2019). The National Universities Commission (NUC) and the National Board for Technical Education (NBTE) are identified as facilitators of both the public and private sectors.

4. Discussion

The findings of this study both align with and expand upon the literature on agribusiness in Nigeria. The identification of strengths such as extensive agricultural land, a youthful population, indigenous knowledge, and supportive government institutions resonates with previous studies highlighting Nigeria's considerable potential in agribusiness (Babu et al., 2016). These findings reinforce the understanding that Nigeria possesses the natural and human resources necessary for a thriving agribusiness sector.

However, the study also sheds light on critical weaknesses, including low technology adoption, infrastructure challenges, educational gaps, and a weak judicial system, which are noted as areas requiring significant improvement (Watson and Winfree, 2022). This nuanced analysis expands the current understanding by emphasizing the specific barriers and limitations that hinder the full realization of Nigeria's agribusiness potential. This finding challenges the notion that resources alone are sufficient for success and underscores the importance of addressing systemic challenges for sustainable growth.

Moreover, the study's identification of promising opportunities such as commercial crop production, agrotourism, foreign investments, research institutions, and virtual business prospects aligns with observations from the World Bank and other literature (Ndhlovu and Dube, 2024; Ikuemonisan, 2024). This alignment reinforces existing knowledge about the diverse

opportunities present in Nigeria's agribusiness landscape and highlights areas where targeted interventions can yield significant returns.

In contrast, the study's discussion of threats such as insecurity, insurance gaps, skill deficiencies, climate change impacts, and limited knowledge about export opportunities offers a sobering contrast to the optimistic outlook on Nigeria's agribusiness potential. These identified threats challenge the narrative of unchecked growth and underscore the need for strategic risk management and capacity-building efforts within the sector.

This study's proposed sustainable strategies, supported by stakeholder consensus and aligned with theoretical frameworks, contribute significantly to the discourse on agribusiness development in Nigeria. By emphasizing the importance of a favourable macropolicy environment, food safety, human capacity development, financial access, quality control, transparency, and research, this study offers a comprehensive roadmap for addressing challenges and leveraging opportunities.

Overall, this study provides a nuanced analysis of Nigeria's agribusiness landscape, expanding the existing knowledge while challenging some prevailing assumptions. The emphasis on collaborative efforts between the public and private sectors to create an enabling environment further enriches the discourse and underscores the potential for Nigeria's agribusiness sector to drive economic growth, food security, and environmental sustainability.

5. Conclusion

The outlined strategies for sustainable agribusiness entrepreneurship in Nigeria are robust and strategically aligned with the country's agribusiness landscape. Creating a favourable macropolicy environment is crucial given Nigeria's diverse agricultural sector, and it resonates well with institutional economics, highlighting the pivotal role of supportive policies in shaping economic behaviour and outcomes. By fostering an environment that encourages investment, innovation, and market access, Nigeria can attract more entrepreneurs to the agribusiness sector, thereby driving growth and sustainability.

Instituting proper food safety and market supply consistency checks addresses critical challenges in Nigeria's agribusiness, particularly quality control and market access. This strategy is rooted in market failure theory, emphasizing the importance of addressing information asymmetry and externalities. Ensuring food safety and a consistent market supply not only enhances consumer trust but also unlocks opportunities for Nigerian agribusinesses to tap into international markets, enhancing competitiveness and revenue generation. These strategies, coupled with increasing human capacity, improving access to finance, implementing strong quality control measures, establishing robust MIS, and enhancing research capacity, form a comprehensive

framework that can catalyze sustainable agribusiness development in Nigeria, fostering increased productivity, competitiveness, and profitability in the sector over the long term.

To address these challenges and leverage opportunities, this study proposes seven sustainable strategies with strong stakeholder consensus. These strategies include creating a favourable macropolicy environment, implementing checks on food safety and market supply consistency, liberalizing policies, enhancing human capacity, increasing access to finance and insurance, implementing quality control measures, establishing a functioning Management Information System (MIS), and boosting research capacity for technology transfer activities.

On the other hand, threats such as insecurity, insurance gaps, skill deficiencies, climate change impacts, and limited knowledge about export opportunities present challenges that need to be addressed to ensure the sector's resilience and growth.

Author Contributions

The percentages of the author's contributions are presented below. The author reviewed and approved the final version of the manuscript.

	E.S.I.
C	100
D	100
S	100
DCP	100
DAI	100
L	100
W	100
CR	100
SR	100
PM	100
FA	100

C= concept, D= design, S= supervision, DCP= data collection and/or processing, DAI= data analysis and/or interpretation, L= literature search, W= writing, CR= critical review, SR= submission and revision, PM= project management, FA= funding acquisition.

Conflict of Interest

The author declared that there is no conflict of interest.

Ethical Consideration

The authors confirm that the ethical policies of the journal, as noted on the journal's author guidelines page, have been adhered to. The experimental procedures were approved by the Ethics Committee of Adekunle Ajasin University, Akungba Akoko (Approve number: Ref: AAUA/AGRIC/DEAN/2305168).

Acknowledgments

The author appreciates the cooperation of the Department of Agricultural Economics, Adekunle Ajasin University, Akungba-Akoko, the enumerators, and all the farmers who participated in the survey.

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