

(REVIEW ARTICLE)



## Roles of international agricultural organizations in economy revamp: The Nigerian experience

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### Abstract

The enduring problems of hunger and poverty in Nigeria are mostly the result of the agriculture sector's failure to have the desired positive impact on the populace. Hence, the study reviewed the roles of international agricultural organizations in economy revamp: the Nigerian experience. In retrospect, a few governments did make an effort to make a statement about agriculture through the creation of farm settlement programs and state-owned agricultural development organizations. However, welfare concerns more than ever served as justification for these activities rather than absolute economic need. The intervention of International Agricultural Organization (IAO) through various types of international agricultural programmes became significant by concentrating on sustainable agricultural practices, technology transfer, capacity building, and policy advocacy, modernizing agriculture, infrastructure development, policy advocacy and reforms, global agricultural trade, market access and trade, climate resilience, research and development, international research and collaboration, food security and agricultural development. To mention but a few, World Bank, International Fund for Agricultural Development and United State Agencies for International Development have contributed to agriculture revamp in the Nigerian economy. Challenges Affecting the Nigerian Agricultural Economy in International Business include: Infrastructure Deficiency, Limited Access to Finance, Inadequate Research and Development, Policy Instability and Inconsistency. It was presented in the study that by providing solutions to these challenges will contribute to a way forward to revamp agriculture in the Nigerian economy, making it more robust, sustainable, and inclusive.

**Keywords:** Economy; Agricultural Organizations; Development; International Support; Nigeria

### 1. Introduction

Despite Nigeria's abundant physical, human, and natural resources, a significant portion of its population experiences poverty. According to a national survey conducted between 2014 and 2015, 75.6 percent of the population lived below the \$1 per day mark, and the relative national poverty rate was 74.4 percent (National Bureau of Statistics [1]. More recent data from the United Nations Development Programme [2] indicates that 84.4 percent and 93.7 percent of the population live below the \$1.25 and \$2 thresholds, respectively. This poverty is particularly acute in rural areas, where over 90 percent of the population resides and relies on agriculture for their livelihoods. In fact, 86.5 percent of the rural population is engaged in agriculture [1]. This underscores the vital role of the agricultural sector, which has the potential to significantly impact the lives of the majority of Nigerians. The persistent issues of hunger and poverty in Nigeria can largely be attributed to the agricultural sector's inability to positively influence the people as it should.

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### 1.1. The Pre-1970 Period

In the period before the 1970s, the government's approach to agricultural development was characterized by minimal direct intervention. Consequently, the government's attitude towards agriculture was hands-off, leaving the private sector and numerous small traditional farmers to bear the primary responsibility for agricultural development. The government's involvement was mainly supportive, focusing on activities such as agricultural research, extension services, export crop marketing, and pricing. During the colonial era's later stages, these activities were primarily regional, with the federal government's role largely limited to agricultural research. This limited government visibility in agricultural development stemmed from an overarching economic laissez-faire philosophy. However, some governments did attempt to assert their presence in agriculture, particularly in the 1950s and 1960s, by establishing state-owned agricultural development corporations and initiating farm settlement schemes. But rather than being motivated by strict economic need, these behaviors were justified more by welfare concerns. But by the end of the 1960s, it was becoming abundantly evident that Nigeria's agricultural sector would be in for some rough seas. Declining export crop yield and possibly minor food shortages were warning signals of approaching agricultural issues. Even then, the majority of these issues were regarded as temporary in nature because they were attributed to the civil war. However, as time went on, events quickly disproved these hopeful presumptions, as the agricultural industry fell more and its issues become much more difficult to solve [3].

### 1.2. Pre-Structural Adjustment Period (1970-1985)

The onset of the 1970s brought widespread concern regarding the state of Nigeria's agricultural sector. This anxiety prompted a significant shift in the government's approach to agricultural development, transitioning from minimal intervention to nearly maximal involvement, especially at the federal level. There was a prevailing sentiment that addressing the increasingly severe challenges in agriculture, particularly related to food supply, necessitated substantial government intervention. This intervention took the form of comprehensive agricultural policies, programs, and projects, some of which directly involved the government in agricultural production activities. The newfound wealth from oil resources further reinforced this perspective. Consequently, the 1970s and early 1980s witnessed an unprecedented influx of agricultural policies, programs, projects, and institutions [4].

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## 2. Roles of International Agricultural Organization (IAO) and Economy Revamp Processes

By concentrating on sustainable agricultural practices, technology transfer, capacity building, and policy advocacy, the International Agricultural Organization (IAO) may significantly contribute to the resuscitation of the economies of Nigeria and any other nation. The IAO could address a number of significant issues Nigeria is currently facing in the agriculture sector, including:

### 2.1. Modernizing Agriculture

- *Technology Transfer:* The IAO can facilitate the transfer of modern agricultural technologies to Nigerian farmers, improving productivity and reducing post-harvest losses. A substantial technology transfers has been made: The Agricultural Development Authorities (ADP) when it was been sponsored by the World Bank has during its Monthly Technology Review Meetings and forth nightly trainings introduced improved varieties of crops and hybrids of livestock to farmers.
- *Precision Farming:* Introducing precision farming techniques can optimize resource use, increase yields, and promote sustainable agriculture [5].

### 2.2. Capacity Building and Education

- *Training Programs:* IAO can organize training programs for farmers, teaching them modern and sustainable farming practices.
- *Educational Initiatives:* Collaborate with extension agents and local educational institutions to develop agricultural curricula that align with the latest advancements in the field [6, 7]. The IFAD funded Livelihood Family Enterprises in the Niger-Delta (LIFE-ND) project has developed curriculum along the value chains of various agricultural enterprises in the implementation of the incubation model for the incubators to adopt in the mentorship of the incubatees.

### 2.3. Infrastructure Development

- *Cold Chain Systems:* Support the development of cold chain systems to maintain the rules and procedures that ensures the required storage and distribution of animal vaccines and reduction of post-harvest losses, especially for perishable goods.

- *Rural Infrastructure*: Invest in rural infrastructure like roads and storage facilities, ensuring that farmers can easily transport their produce to markets [8,9,10].

#### 2.4. Policy Advocacy and Reforms

- *Policy Recommendations*: Provide evidence-based policy recommendations to the Nigerian government, encouraging policies that support smallholder farmers and sustainable agriculture.
- *Land Reforms*: Advocate for transparent and fair land reforms, ensuring that farmers have secure land tenure, which is crucial for long-term agricultural investments [9,11].

#### 2.5. Market Access and Trade

- *Market Linkages*: Facilitate linkages between farmers and markets, both domestic and international, to ensure fair prices for agricultural products.
- *Export Promotion*: Assist Nigerian farmers in meeting international quality standards, enabling them to export agricultural products and earn foreign exchange [3].

#### 2.6. Climate Resilience

- *Climate-Smart Agriculture*: Promote climate-smart agricultural practices that help farmers adapt to changing climate patterns and reduce the sector's contribution to climate change.
- *Disaster Preparedness*: Develop strategies to help farmers cope with natural disasters, such as droughts and floods, which can significantly impact agricultural productivity [12, 13].

#### 2.7. Research and Development

- *Investment in Research*: Support agricultural research and development initiatives to enhance crop varieties, improve soil fertility, and develop resilient farming techniques.
- *Innovation Hubs*: Establish innovation hubs where farmers can collaborate with scientists and researchers to find innovative solutions to local agricultural challenges [14].

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### 3. Concept of International Agriculture

The concept of international agriculture refers to the global interconnectedness and interdependence of agricultural practices, trade, technologies, and policies across different countries and regions. It encompasses the exchange of agricultural goods, services, knowledge, and innovations on an international scale. Several key aspects define the concept of international agriculture includes:

#### 3.1. Global Agricultural Trade

- *Import and Export*: Countries engage in the import and export of agricultural products to meet domestic demands and capitalize on their comparative advantages in agricultural production.
- *Commodity Markets*: Agricultural commodities such as grains, livestock, and cash crops are traded internationally, affecting global food prices and supply [15].

#### 3.2. Technology Transfer

- *Sharing Innovations*: Advanced agricultural technologies, practices, and research findings are shared across borders to improve agricultural productivity, sustainability, and resilience.
- *Capacity Building*: International agricultural organizations and developed nations often assist developing countries in building their agricultural capacities through knowledge transfer and skill development programs [16].

#### 3.3. International Research and Collaboration

- *Collaborative Research*: Scientists and researchers collaborate across countries to address global agricultural challenges, including crop diseases, climate change impacts, and sustainable farming methods.
- *Data Exchange*: Countries share agricultural data and research outcomes to facilitate evidence-based policymaking and improve agricultural practices [17].

### 3.4. Policy Harmonization and Standardization

- *Trade Agreements:* Countries negotiate trade agreements that affect agricultural tariffs, subsidies, and regulations to facilitate the smooth flow of agricultural products across borders.
- *Quality Standards:* International organizations establish standards for agricultural products to ensure quality, safety, and conformity, promoting fair trade practices [18].

### 3.5. Food Security and Agricultural Development

- *Development Assistance:* Developed nations and international organizations provide aid and development assistance to improve agricultural infrastructure, enhance food security, and alleviate poverty in developing countries.
- *Knowledge Exchange:* Knowledge sharing initiatives help countries learn from each other's successes and failures, enabling the development of effective agricultural policies and programs [19].

### 3.6. Sustainable Agriculture and Environmental Concerns

- *Environmental Sustainability:* International cooperation focuses on promoting sustainable agricultural practices that conserve natural resources, protect biodiversity, and mitigate climate change impacts.
- *Conservation Efforts:* Collaborative efforts to conserve plant genetic resources and *traditional agricultural knowledge are essential for global food security and agricultural biodiversity* [19].

### 3.7. Crisis Response and Humanitarian Aid

- *Emergency Assistance:* International agricultural organizations and governments provide humanitarian aid in the form of food, seeds, and agricultural resources during times of crisis, such as natural disasters and conflicts [20,21].

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## 4. Types of International Agriculture

- **International Agricultural Trade and Economics:** This area encompasses the exchange of agricultural products and its impact on the global economy, including trade policies, market analysis, and economic implications [22].
- **International Agricultural Development and Sustainability:** Focuses on sustainable agricultural practices, development initiatives, and their impact on food security and rural livelihoods globally [23].
- **International Agricultural Technology Transfer:** Examines the transfer of agricultural technologies, including biotechnology, to different countries and its socio-economic and environmental implications [24, 25] reported high technological impacts by a World Bank Project through Fadama III in Nigerian agriculture.
- **International Agricultural Policy and Governance:** Studies policies, regulations, and governance structures related to agriculture at the international level, including trade agreements and agricultural subsidies [26].
- **International Agricultural Education and Extension:** Focuses on international agricultural education systems, extension services, and their role in knowledge dissemination and technology adoption [27].
- **International Agricultural Research and Collaboration:** Studies collaborative research efforts across borders, involving institutions and scientists from different countries to address global agricultural challenges [28].

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## 5. Various Organizations in Agricultural Foreign Business

International Relations [29] stressed on several organizations playing significant roles in agricultural foreign business, promoting international collaboration, trade, research, and development in the agricultural sector. Some key international organizations and entities involved in agricultural foreign business include:

- **Food and Agriculture Organization (FAO) of the United Nations:** FAO works on international efforts to defeat hunger by promoting sustainable agricultural development, improving nutrition, and ensuring food security.
- **International Fund for Agricultural Development (IFAD):** IFAD provides loans and grants to developing countries to finance agricultural projects and initiatives that improve rural livelihoods and promote sustainable agriculture.
- **World Trade Organization (WTO):** WTO deals with the global rules of trade between nations. It includes agreements related to agriculture, shaping international trade policies in the agricultural sector.

- **World Bank:** The World Bank provides financial and technical assistance to developing countries for development projects, including agricultural initiatives that aim to reduce poverty and enhance economic growth.
- **United Nations Development Programme (UNDP):** UNDP supports countries in their efforts to achieve sustainable development, including projects related to agricultural development and poverty reduction.
- **African Development Bank (AfDB):** AfDB provides financial and technical assistance to African countries, supporting agricultural projects and initiatives aimed at improving food security and promoting economic development.
- **International Finance Corporation (IFC):** IFC, a member of the World Bank Group, supports private sector investment in developing countries, including agribusiness projects that enhance agricultural productivity and promote sustainable practices.
- **Consultative Group on International Agricultural Research (CGIAR):** CGIAR is a global partnership that unites organizations engaged in agricultural research for sustainable development, promoting food security, poverty reduction, and environmental sustainability.
- **United States Agency for International Development (USAID):** USAID supports agricultural programs in developing countries, providing assistance to improve agricultural productivity, enhance food security, and promote economic growth.
- **International Agricultural Research Centers:** Organizations such as the International Rice Research Institute (IRRI), International Maize and Wheat Improvement Center (CIMMYT), and International Center for Tropical Agriculture (CIAT) conduct research on crops and agricultural practices, contributing to global food security and sustainable agriculture.
- **Regional Agricultural Organizations:** Regional bodies like the European Agricultural Fund for Rural Development (EAFRD) in Europe and the Inter-American Institute for Cooperation on Agriculture (IICA) in the Americas work on agricultural development and trade within specific regions.

These organizations collaborate with governments, research institutions, NGOs, and the private sector to promote international agricultural trade, sustainable practices, and economic development in the agricultural sector globally

*Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL):* NIRSAL is a national initiative that facilitates the flow of affordable finance and investments into the agricultural sector, promoting innovative agricultural practices and technologies.

*National Agricultural Extension and Research Liaison Services (NAERLS):* NAERLS in Nigeria is responsible for agricultural research and extension services, disseminating knowledge and innovations to farmers, thereby enhancing agricultural productivity.

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## 6. IFAD contribution to agriculture towards the revamping of Nigerian economy

Despite Nigeria's abundant agricultural resources and significant oil wealth, the country faces widespread poverty that has escalated since the late 1990s. Approximately 70% of Nigerians live on less than \$1.25 a day, with rural areas experiencing particularly severe poverty. In these regions, up to 80% of the population lives below the poverty line, with limited access to social services and infrastructure. Rural women and men, who heavily rely on agriculture for both sustenance and income, constitute the majority of Nigeria's impoverished population. Small-scale farmers, cultivating modest plots of land and relying on rainfall rather than irrigation systems, produce about 90% of the country's food.

Persisting poverty and the growing issue of youth unemployment pose significant challenges to Nigeria's developmental progress. The problem of youth unemployment and underemployment is more pronounced in rural areas, where agriculture remains the primary livelihood option. Despite Nigeria's GDP growth being three times higher than its population growth, generating sufficient employment opportunities for the 4.5 million young individuals entering the labor market annually remains a notable challenge.

Between 2006 and 2010, the unemployment rate in rural areas surged from 14.8% to 24.2%, reaching 37.3% for rural youth in 2010 [1]. Nearly 70% of the unemployed population in Nigeria comprises young women and men, primarily due to their lack of adequate skills despite high levels of education. The escalating youth unemployment in rural regions can be attributed to the underdeveloped nature of the agricultural sector, which fails to attract the younger demographic. In response to these challenges, the government implemented a multifaceted transformation agenda in 2011, focusing on youth employment. One of its key initiatives, the Agricultural Transformation Agenda (ATA) led by the Federal Ministry of Agriculture and a part of the National Transformation Agenda, strives to promote agriculture as

a viable business. Operating across various value chains, the ATA aims to enhance agricultural productivity, value addition, processing, and commercialization. By expanding these opportunities, the initiative seeks to create jobs, generate wealth, ensure food security, and particularly benefit youth and women [30].

### 6.1. Key Elements of IFAD's Country Programme

IFAD's assistance to the Nigerian Government's rural poverty reduction initiative is firmly rooted in a people-centric approach. By specifically targeting numerous smallholder farmers, IFAD's programs prioritize community engagement with smallholder farmers at the core. The organization also advocates for interventions based on commodities, offering vital technical and financial aid across multiple value chains, including livestock products, rice, cereals, roots, tubers, vegetables, and agroforestry items. The primary objectives are to empower impoverished rural communities, particularly women, by enhancing their access to essential resources, infrastructure, and services. Additionally, IFAD strives to foster local community management of land, water, and shared resources, thereby combating environmental degradation.

IFAD-supported initiatives tackle critical issues like erosion, soil fertility depletion, and the management of coastal zone natural resources. The establishment of an IFAD country office has significantly enhanced the management of the national program. This development has amplified IFAD's role in policy engagement and enabled the strengthening of partnerships within the country.

Through the innovative Community-Based Natural Resource Management Programme (CBNRMP), IFAD has introduced a novel approach to enterprise development. This method involves nurturing a unique category of entrepreneurs known as N-Agripreneurs. These dynamic university graduates own and operate small-scale enterprises, acting as intermediaries between market-oriented farmers, predominantly youth, and large-scale agro-industries and wholesalers. The N-Agripreneurs play a pivotal role in offering business development services to producers, especially young individuals interested in agro-based activities. Moreover, they serve as knowledge-sharing platforms for farming communities, addressing the challenge of youth unemployment in the Niger Delta region. This approach aligns with the federal government's efforts to promote agriculture among women and youth as a viable and lucrative career choice, in harmony with the Agricultural Transformation Agenda (ATA) [30].

### 6.2. Potential obstacles to achieving results

[31] discovered that similar to other business ventures in Nigeria, the effort to expand agribusiness faces significant challenges due to high operational costs attributed to external factors. These challenges include:

- Erratic power supply: Unpredictable electricity provision disrupts business operations.
- Double-taxation: Businesses face the burden of being taxed multiple times, increasing financial strain.
- Lack of consumer protection for inputs: Absence of safeguards for agricultural inputs affects product quality and reliability.
- Extortion and corruption: Producers are often subjected to extortion and corrupt practices, impacting their overall profitability.
- Poor access to markets: Limited avenues for selling products hinder market expansion and revenue generation [9].
- Limited access to productive inputs: Inadequate access to financial resources and land restricts business growth.
- Insufficient business skills: Lack of necessary skills hampers competitiveness and investment opportunities.

To address these challenges, the program aims to implement strategies such as introducing low-energy cost systems to overcome power supply issues. It also plans to collaborate with civil society for tax harmonization and advocate for policies against double taxation. Partnerships with financial institutions, civil society organizations, and relevant development partners will be established to facilitate access to land and counteract these challenges. Furthermore, collaboration with entities like the Niger Delta Development Commission and the enterprise development unit of the Federal Ministry of Agriculture will enhance the business skills of program beneficiaries [32].

IFAD adopts three interconnected strategies to scale up operations in Nigeria. The utilization of enterprise investment champions enhances intervention quality and increases the involvement of young entrepreneurs in enterprises. IFAD's country office employs a uranium fission model, strengthening lead youth investors to provide apprenticeship services to others. These young entrepreneurs undergo training, mentorship, and business guidance, operating cycles under the guidance of their mentors. After the agreed timeframe, they are encouraged to replicate the development process for

other youths. This model leverages resources from private investors and utilizes businesses as platforms for knowledge-sharing in agribusiness development, ensuring sustainable growth and success [33].

Collaboration with government institutions and private-sector entities is a pivotal aspect of the country's strategy for expanding successful initiatives. The IFAD country office prioritizes demonstrating tangible results to garner support, achieving buy-in through policy dialogue meetings with the government and private investors. The strategy also involves the utilization of knowledge-sharing platforms to disseminate best practices. Rooted deeply in the use of various knowledge products, processes, and systems, this approach employs print and electronic media, communication agencies, and stakeholders to generate interest among other development programs and the government in adopting similar practices [34].

Regarding the World Bank's involvement in revitalizing Nigeria's economy, Nigeria stands as Africa's most populous country and the largest oil exporter, possessing significant economic potential. Despite these qualities, Nigeria grapples with substantial developmental challenges. The collaboration between Nigeria and the World Bank gained momentum after the establishment of a democratic regime in 1999 under President Olusegun Obasanjo. The World Bank engaged in efforts to reduce poverty rates, enhance human capital, diversify revenue through non-oil sectors, and aid economic management in Nigeria [35].

Initially, progress was slow, with funds released at a sluggish pace until 2004. Projects were often delayed and deemed unsatisfactory. From 2000 to 2007, the World Bank concentrated on macro stability and governance reforms, resulting in moderate satisfaction according to evaluations. Focus areas included social service delivery, community empowerment, and laying the foundation for non-oil growth, though these efforts were deemed moderately unsatisfactory by the World Bank assessment.

By 2007, projects in Nigeria began yielding better outcomes. In 2016, Nigeria ranked as the 12th highest recipient of loans from the World Bank, amounting to \$6.6 billion. As of 2018, the World Bank had 31 projects spanning 772 locations in Nigeria, totaling \$9.21 billion. These initiatives encompass sectors such as social protection, health, agriculture, fishing, forestry, energy, and public administration, addressing areas in need of refinement. Since 1958, the World Bank has approved over 225 projects in Nigeria, primarily through IDA credits and IBRD loans, signifying a longstanding partnership in the country's development [35]

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## 7. World Bank Success stories in Nigeria

Despite the inherent risks associated with most projects, both the World Bank and Nigeria have undertaken initiatives with the aim of enhancing the country's infrastructure. While some endeavors have faced setbacks, many others have been remarkably successful, significantly improving the lives of Nigeria's populace. The World Bank has made notable strides in various sectors including urban and rural development, energy production, and agriculture.

One such triumph is the Rural Access and Mobility Project (RAMP), a brainchild of the World Bank. This initiative focused on constructing and reconstructing roads to enhance social conditions and stimulate business activities in specific communities. Since its inception in 2008, RAMP has facilitated the construction or improvement of 150 new river crossings and over 464 kilometers of rural roads. This transformation allowed children to attend school even during rainy seasons. Additionally, the project led to the transportation of 4.6 million tons of agricultural produce, a significant increase from the previous 3.5 million tons. It not only reduced transportation costs but also fueled population growth in the region, fostering the emergence of new businesses such as fishing farms, poultry farms, sawmills, and markets alongside these improved roads [35].

Another noteworthy achievement is the Nigeria National Energy Development Project (NEPD), which commenced in 2005. By its completion in 2012, NEPD successfully provided more efficient energy to 4.4 million consumers across Nigeria. The project connected 40 communities and over 24,600 households nationwide, installing 8,100 meters of grid infrastructure [36].

Furthermore, the National Fadama Project stands as a testament to success, socio-economic improvement, livelihood satisfaction, prompting its renewal multiple times with slight modifications to continually enhance farmers' situations in various states in Nigeria; while aligning with Nigeria's Agricultural Transformation agenda. Initiated in 1993 and ongoing as of 2018, this project has transformed farming into a profitable venture, cultivating farmers into "Agropreneurs." It has significantly reduced poverty levels in the areas where it was implemented, making a lasting impact on agricultural communities [37, 38].

## 8. Empirical Studies

[39] employed multiple regression analysis to examine the contribution of agricultural sector on the Nigerian economic development. They found that a positive relationship between Gross Domestic Product (GDP) *vis-à-vis* domestic savings, government expenditure on agriculture and foreign direct investment between the periods of 1986 to 2007. It was also revealed in the study that 81% of the variation in GDP could be explained by domestic savings, government expenditure and foreign direct investment.

[40] analyses the relationship between agricultural resources and economic growth in Nigeria. The ordinary least square regression method was used to analyze the data. The results revealed a positive cause and effect relationship between Gross Domestic Product (GDP) and agricultural output in Nigeria. Agricultural sector is estimated to contribute 34.4% variation in Gross Domestic Product (GDP) between 1970 and 2010 in Nigeria. The agricultural sector suffered neglect during the hey-days of the oil boom in the 1970s. In order to improve agriculture, government should see special incentives are given to farmers, provide adequate funding, and also provide infrastructural facilities such as good roads, pipe borne water and electricity.

In their study, [41] conducted an analysis of the Nigerian agricultural sector. The primary objective was to empirically assess the agricultural sector's contribution to economic growth in Nigeria. The study utilized the Ordinary Least Squares (OLS) technique and Histogram-Normality Test, employing data from the Nigerian economy spanning from 1981 to 2018, sourced from the Central Bank of Nigeria (CBN) and World Development Indicators (WDI). The study's findings indicated a significant contribution of the agricultural sector to economic growth in Nigeria. Notably, there was a substantial increase in agricultural output, particularly between 2016 and 2018. Based on these results, the paper recommends that the Nigerian government should prioritize its agricultural sector, given its substantial contributions to economic growth, employment generation, and long-term food security.

[42] reported that agriculture is a panacea for economic growth; this support the battle for long-run economic growth is either won or lost in the agricultural sector. However, how this path births economic prosperity has been the subject of debates among economist and development scholars. This study empirically examines the impact of agricultural sector on the economic growth of Nigeria, using time series data from 1981 to 2013. Findings revealed that real gross domestic product, agricultural output and oil rents have a long-run equilibrium relationship. Vector error correction model result shows that, the speed of adjustment of the variables towards their long run equilibrium path was low, though agricultural output had a positive impact on economic growth. It was recommended that, the government and policy makers should embark on diversification and enhance more allocation in terms of budgeting to the agricultural sector.

According to [43] in most developing countries, agriculture is both the main sector that provides employment to large segments of the population and the key to sustained economic growth of the countries. In the light of this, the study presents an empirical analysis of the impact of agriculture credit on economic growth in Nigeria. Equally highlighted are the problems of agricultural production in Nigeria and the strategies for agricultural transformation of the economy. A review of the various policies of the government was discussed. Our finding revealed that agricultural variables have impact on economic growth and their contribution to export growth has been encouraging. Consequently, the macro-econometric model in this study contributes to the development of policy and programming by shedding light on the choice to be made and indicating the magnitude and direction of responses that can be expected from changes in key agricultural policy.

[44] in 2012, IFPRI developed its 2013–2018 strategy to address unprecedented challenges in the food policy landscape. Five years later, many of those challenges persist while new threats and opportunities have arisen that will have fundamental impacts on future food security and nutrition. The Institute is refreshing its strategy to respond to these ongoing and emerging issues while continuing to deliver on its mission to provide research based policy solutions that sustainably reduce poverty and end hunger and malnutrition. IFPRI's vision remains that of a world free of hunger and malnutrition. The IFPRI Strategy Refresh: 2018–2020 outlines the strategic direction of the Institute for the next three years. It reviews the changing landscape of global developments as well as persistent issues that influence food policy. It also presents updates to IFPRI's research areas that will drive the Institute's efforts to reshape food systems and contribute to the achievement of the Sustainable Development Goals (SDGs). Partnerships, communications, capacity strengthening, and data and knowledge management will continue to be essential components for taking IFPRI's research from action to impact. The strategy refresh was informed by consultations with IFPRI staff and trustees as well as by feedback from IFPRI's partners and collaborators.



## 9. Challenges Affecting the Nigerian Agricultural Economy in International Business

[45] views the Nigeria's agricultural sector facing several challenges that impact its participation in international business. These challenges can hinder exports, reduce competitiveness, and impede the sector's overall growth and development in the global market. Some key challenges affecting the Nigerian agricultural economy in international business include:

### 9.1. Infrastructure Deficiency

- *Poor Transportation:* Inadequate transportation infrastructure leads to high logistics costs, making Nigerian agricultural products less competitive in international markets.
- *Lack of Cold Storage:* Insufficient cold storage facilities result in high post-harvest losses, limiting the export of perishable goods [9].

### 9.2. Limited Access to Finance

- *Limited Credit Facilities:* Smallholder farmers and agribusinesses struggle to access affordable credit, hindering their ability to invest in modern technologies and expand operations for international trade [46, 47, 48].
- *High Interest Rates:* High-interest rates on loans increase the cost of capital, reducing the profitability of agricultural ventures.

### 9.3. Inadequate Research and Development

- *Low Research Investment:* Insufficient investment in agricultural research and development leads to outdated farming practices and limited innovation, reducing productivity and competitiveness.
- *Lack of Technological Adoption:* Limited adoption of modern agricultural technologies hampers efficiency and output.

### 9.4. Policy Instability and Inconsistency

- *Unpredictable Policies:* Frequent changes in agricultural policies and regulations create uncertainty, making it challenging for farmers and businesses to plan for long-term international engagements.
- *Export Bans and Restrictions:* Temporary bans and restrictions on certain exports disrupt international trade relationships and market access.

### 9.5. Inadequate Quality and Standards

- *Quality Control:* Inconsistent quality standards in agricultural products hinder market acceptance and can lead to rejections by importing countries.
- *Sanitary and Phytosanitary Measures:* Non-compliance with international sanitary and phytosanitary standards restricts the export of agricultural goods.

### 9.6. Climate Change and Environmental Issues

- *Climate Vulnerability:* Climate change-related events, such as droughts and floods, affect agricultural productivity, leading to unpredictable harvests and reduced international competitiveness.
- *Environmental Degradation:* Soil degradation and deforestation impact agricultural sustainability, affecting long-term international trade prospects.

### 9.7. Lack of Market Information and Access

- *Market Knowledge:* Limited access to market information and intelligence hampers the ability of Nigerian farmers and businesses to identify lucrative international markets.
- *Market Access Barriers:* Tariffs, quotas, and non-tariff barriers in international markets hinder the export of Nigerian agricultural products.

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## 10. Way Forward to Revamp International Agriculture

Revamping international agriculture in Nigeria requires a multifaceted approach that addresses various challenges and promotes sustainable agricultural practices, innovation, and market access. Some key strategies for moving forward include:

- *Investment in Infrastructure: Roads and Transportation:* Improve road networks and transportation systems to reduce post-harvest losses and facilitate the movement of agricultural products from farms to markets and ports.
- *Cold Chain Facilities:* Establish and upgrade cold storage and refrigeration facilities to preserve perishable goods, ensuring product quality for export.
- *Promote Research and Innovation:* Through Agricultural Research by increase in funding for agricultural research and development to enhance productivity, develop climate-resilient crops, and improve farming techniques; and improved Technology Adoption by encouraging farmers to adopt modern agricultural technologies such as precision farming, IoT devices, and drones for efficient farming practices.
- *Capacity Building and Education:* Provide training and extension services to farmers, educating them about modern farming practices, sustainable techniques, and international quality standards; and strengthen agricultural education at all levels, aligning curricula with the latest advancements and market demands.
- *Policy Reforms and Consistency:* Ensure stable and predictable agricultural policies to provide a conducive environment for investment and long-term planning for farmers and businesses; and develop market-oriented policies that promote exports, including incentives for farmers and agribusinesses engaged in international trade.
- *Quality Standards and Certification:* implement and enforce international quality and safety standards (e.g., Global GAP) for agricultural products, ensuring that exports meet the requirements of importing countries and assist farmers and businesses in obtaining necessary certifications, fostering confidence in international buyers.
- *Climate-Smart Agriculture:* Drought-Resistant Crops development. Invest in research and promote the cultivation of drought-resistant and climate-adaptive crop varieties to mitigate the impact of climate change; and water management by implementing efficient water management practices, such as rainwater harvesting and drip irrigation, to conserve water resources.
- *Market Diversification and Access:* Identify and explore new international markets opportunities for agricultural products, diversifying the export base beyond traditional products; and develop Trade Agreements with active participation in regional and international trade agreements to expand market access and reduce trade barriers.
- *Financial Support and Investment:* Facilitate easy access to credit for farmers and agribusinesses at reasonable interest rates, enabling them to invest in technology, infrastructure, and expansion; and encourage public-private partnerships to attract investments into the agricultural sector, fostering innovation and creating value chains.
- *Promote Agribusiness and Value Addition:* Promote processing and value addition industries, encouraging the production of processed agricultural products for export; provide support and incentives for agricultural entrepreneurs and startups, fostering innovation and entrepreneurship in the sector.
- *Monitoring and Evaluation:* In data collection, there should be an establishment of robust data collection systems to monitor agricultural production, market trends, and international trade patterns, enabling evidence-based decision-making; and regularly assess the impact of policies and interventions to refine strategies and ensure effectiveness in achieving the goals of agricultural revamp.

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## 11. Conclusion

The IAO can be instrumental in the economic revamp of Nigeria by focusing on sustainable agricultural practices, policy advocacy, capacity building, and creating market opportunities. By addressing these areas, Nigeria can transform its agricultural sector, improve food security, create jobs, and boost the overall economy. Collaboration between the IAO, the Nigerian government, local farmers, and other stakeholders is essential to achieving these goals. The concept of international agriculture underscores the importance of collaboration, knowledge sharing, and mutual support among nations to address global agricultural challenges, ensure food security, and promote sustainable agricultural development worldwide. International cooperation in agriculture is crucial for building resilient food systems and addressing the evolving needs of the growing global population. By actively engaging in these roles, agricultural organizations can significantly contribute to the revamp of the Nigerian economy, making it more robust, sustainable, and inclusive. Collaboration between governmental bodies, NGOs, research institutions, and the private sector is essential to achieving these goals effectively. Addressing these challenges requires comprehensive strategies, including investments in infrastructure, research and development, policy reforms, and capacity building. Collaboration between the government, private sector, and international organizations is essential to overcoming these obstacles and enhancing Nigeria's participation in international agricultural business. Collaboration between the government, international organizations, private sector entities, research institutions, and farmers' cooperatives is crucial in implementing these strategies effectively. By addressing these areas comprehensively, Nigeria can revamp its

international agriculture sector, boost exports, create jobs, enhance food security, and contribute significantly to the country's economic development.

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## Compliance with ethical standards

### *Disclosure of conflict of interest*

No conflict of interest was declared by the authors.

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