



POLICY STATUS REGULATING CONVENTIONAL AND ORGANIC AGRICULTURAL PRACTICES IN NIGERIA: A REVIEW

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Abstract

Nigeria's agricultural policy has a big impact on the country's economic growth, environmental sustainability, and food security. This study examined the current status of government policies regulating conventional and organic agricultural practices in Nigeria. Conventional agriculture, due to its substantial impact on food production, receives greater government attention in Nigeria. However, its widespread use has been linked to environmental degradation, biological and chemical contamination of food crops, and poor ecosystem functioning. Organic agriculture, while less prevalent due to concerns about lower crop yields, offers a more sustainable alternative. The lower yield of organic agriculture often leads to higher product prices compared to conventional produce. This assessment underscored the necessity of integrating organic farming into the national agricultural policy framework as a holistic strategy for promoting sustainable agriculture. This paper explored various challenges hindering organic agriculture in Nigeria, including market accessibility, certification, and insufficient government support. It suggested adopting global standards and policy frameworks to foster a comprehensive regulatory landscape that supports both conventional and organic farming practices. We concluded and recognized that Nigeria's agricultural policy has made progress, but urgent reforms are necessary to promote organic agriculture alongside conventional methods. This approach will contribute to environmental sustainability, economic resilience, and improved food and nutrition security in the country.

Keywords: Organic agriculture; conventional agriculture; Agricultural policies; Nigeria, Food security

INTRODUCTION

Agriculture is a vital sector of Nigeria's economy, contributing to the gross domestic product, foreign exchange, employment, and food security (Abubakar and Ibrahim, 2019). The sector encompasses the production of crops, livestock, fisheries, forestry, and agro-industrial processing of these products. Nigeria has the potential to meet international sustainability targets and access export markets as demand for nutritious food increases globally.

The two dominant farming systems in Nigeria are conventional and organic agriculture. Conventional agriculture involves the use of contemporary methods including synthetic fertilizers, pesticides, improved breeds, and mechanization in food production. Most often, this system adopts the use of inputs that have been modified or synthesized by man to enhance food production under limiting space and time. Conventional agriculture has substantial impact on food production and receives greater government attention in Nigeria (Ume and Bahta, 2024). However, its widespread use has been

linked to environmental degradation, biological and chemical contamination of food crops causing health risks to humans and animals, and poor ecosystem functioning (AdeOluwa *et al.*, 2017).

Contrarily, organic agriculture involves the use of indigenous practices and inputs that are nature-based, mostly derived from plant and animal origins, in food production. This approach seeks to promote, biodiversity, soil health, and agroecosystem functioning and prevent soil and environmental degradation during food production (AdeOluwa *et al.*, 2017). Unlike conventional agriculture that is widespread in the country, Nigerians are now becoming aware of the importance of organic agriculture for its sustainability over time and preservation of human and environmental health (Nandwani and Nwosisi, 2016). Nigeria is dependent on smaller African nations for supplies, as evidenced by Igoh's (2021) findings that, in spite of Abuja's organic market, items are imported from Ghana to satisfy customer demand.

Despite this fact, organic agriculture in Nigeria is perceived to have received less attention,

intervention, extension services and subsidies from the government. Thus, this review analyzes Nigeria's policies on organic and conventional agriculture, focusing on existing frameworks, support mechanisms, and challenges. It also seeks to evaluate policy development, identifies gaps, and highlights implications for sustainability, and food security.

Conventional Agriculture in Nigeria

Conventional farming dominates Nigeria's agricultural landscape, receiving considerable government support through subsidies, extension services, and policies (Mustapha et al., 2012; Agunbiade, 2013). Conventional agriculture remains the preferred approach for achieving food security in Nigeria (Adepoju et al., 2022). Modern farming technologies, such as tractors and irrigation systems, have boosted productivity, but at a high environmental cost. Nigerian farmers and consumers frequently rely on conventional farming methods because they are unaware of the long-term repercussions, such as soil erosion and environmental degradation, as well as food safety and health risks. As a result, there is little or no market for sustainable alternatives (Pretty, 2008), allowing conventional farming practices to flourish in the country.

Nigerian agricultural research is mostly focused on enhancing traditional farming technologies, with government-supported universities promoting high-yielding varieties, pest-resistant crops, and synthetic fertilizers, limiting the development of sustainable farming approaches. However, smallholder farmers' adoption of conventional agricultural technologies is frequently slow due to inadequate transmission, limited input access, and high cost of mechanized or modernized practices. Furthermore, conventional agriculture is associated with public health challenges due to insufficient regulatory enforcement, which leads to excessive use of chemical inputs and environmental degradation, compromising its effectiveness and sustainability (Warra and Prasad, 2020; Fajemirokun, 2024).

Organic Agriculture in Nigeria

Pre-colonial Nigerian agriculture was organic, using natural fertilizers such as animal manure and ash from burned plants instead of chemical fertilizers and pesticides (Showers, 2006; Popoola et al., 2010). Despite its sustainability and adaptability, pre-colonial Nigerian agriculture was limited in terms of large-scale production due to a lack of contemporary technologies (Korieh, 2003; Abbas, 2019). In 2010, the African Union Heads of State endorsed organic farming leading to the development of the ecological organic agriculture (EOA) initiative which is viewed as a holistic system that sustains ecosystem health and relies on

natural cycles, avoiding synthetic inputs. The 2014 Malabo Declaration has called for accelerated agricultural growth and transformation, offering a platform to promote EOA as a tool for achieving sustainable development in Africa (AdeOluwa et al., 2017). Presently, Nigeria is beginning to recognize the advantages of organic agriculture for rural development, health, and environmental sustainability. Establishing a structured framework for organic farming in Nigeria is a priority for important organizations such as the Nigerian Organic Agriculture Network (NOAN), now known as Association of Organic Agriculture Practitioners of Nigeria, and the Organic Agriculture Project in Tertiary Institutions in Nigeria (OAPTIN) (Ibrahim et al., 2018; Adebisi, 2019; 2020; Olatohun et al., 2019; Tooba et al., 2021; Okonta et al., 2023).

Organic agriculture is growing globally, with over 96 million hectares of arable land managed by 4.5 million farmers (Willer et al., 2024). In Nigeria, there are 706 certified organic food producers, representing 9% of the total organic food producers in Africa according to the International Federation of Organic Agriculture Movement (IFOAM) survey (2023) (Willer et al., 2024). It can be inferred from the data above (706 certified organic food producers) that Nigerian farmers may lack awareness of organic farming practices, benefits, and transitions (the boundaries between organic and conventional agriculture). Moreover, this problem may be exacerbated by limited government-led education programs and inadequate training and extension services (Emeana, et al. 2018, Adebayo and Oladele, 2014). For example, the study of AdeOluwa et al. (2017) has reported that a significant portion of agricultural officers in Nigeria are unaware of the Malabo Declaration and its relevance to organic agriculture. To tackle the mirage of problems facing organic agriculture, the 2014 Malabo Declaration advocated for agriculture-led growth, increased public expenditure on agriculture (at least 10%), and a focus on reducing hunger and poverty by 2025 through the adoption of EOA principles (AdeOluwa et al., 2017). Nigeria's agricultural research agenda largely neglects organic agriculture, with most efforts focused on improving conventional techniques and increasing chemical inputs efficiency. Also, the lack of comprehensive data on organic farming practices, market demand, food safety and environmental impacts hinders policymakers from designing evidence-based policies, requiring reliable monitoring and adjustments needed (Gava et al., 2020; Deconinck et al., 2021; Hofmann et al., 2023).

Challenges in Policy Implementation

The agricultural sector in Nigeria faces significant hurdles in policy implementation particularly in the underdeveloped organic farming sector. Most often,

the rollouts of agricultural policies in Nigeria are ineffective, thereby limiting policy outcomes. One of the primary obstacles to effective policy implementation is the lack of adequate funding, which is complicated by competing budgetary demands, economic turn downs, inflation and currency depreciation. Both organic and conventional agriculture suffer from insufficient financial resources, conventional agriculture receives more attention through subsidies for fertilizers, pesticides, and improved seeds (Kiliç et al., 2020) through various policy implementation. In contrast, organic agriculture lacks equivalent financial backing (Lotter 2003; Dabbert et al., 2004; AdeOluwa et al., 2017) partly due to its lower adoption (Atungwu et al., 2016).

The lower adoption rate of organic agriculture is complicated with lower yield which results to higher product prices compared to conventional produce thereby limiting market competitiveness. Other challenges facing organic agriculture include limited awareness, weak political support, insufficient government intention and limited financial resources (AdeOluwa et al., 2017).

Nigeria's bureaucratic structure hinders the swift implementation of agricultural policies due to its decentralized settings, resulting in duplication of efforts and delayed decision-making (Edem, 2003; Adetunji, 2022). Corruption and misallocation of resources in government institutions hinder agricultural policy implementation, affecting conventional farmers and organic agriculture. Poor coordination between Federal and State governments often hinders agricultural policy implementation, leading to uneven execution across different regions due to differing priorities or commitments (Allain-Dupré, 2018).

Most efforts promoting organic agriculture through different interventions, policies and funding are often driven by international donors and non-governmental organizations (NGOs) rather than government. This dependence creates an unstable environment for policy continuity and long-term implementation, as funding may fluctuate based on donor priorities. Furthermore, the formal institutional structure for organic agriculture in Nigeria is in the early stages of policy implementation (Sanyal and Babu, 2010; Loconto et al., 2016; Ozor and Amudayi, 2021), aided by NGOs such as NOAN and OAPTIN (Atungwu et al., 2016). The implementation still lacks a unified national organization to supervise organic agriculture development, regulation, and promotion (Ozor and Amydavi, 2021).

Conventional Agriculture Policies in Nigeria

The introduction of cash crops like cocoa, groundnuts, cotton, and palm oil from South

America (Hammons et al., 2016), tropical and subtropical regions of Africa, America, and India (Wendel and Cronn, 2003), as well as the tropical rain forest region of West Africa (Rival and Levang, 2015), led to a shift towards conventional agriculture in Nigeria as a result of colonial and post-independence influences. Nigeria's government implemented policies like Operation Feed the Nation and Green Revolution Program in the 1970s and 1980s, respectively, to enhance crop yields, reduce food imports, and ensure food security. These policies promoted conventional agriculture by offering subsidies, improved seeds, and credit facilities to Nigerian farmers (Abdu and Marshall, 1990). More so, the advent of modern farming equipment, such as tractors and irrigation systems, significantly increased agricultural production (Olukunle, 2013). Successive governments' implemented policies promoting conventional agriculture, providing subsidies, research and extension services, and market support to enhance agricultural outputs (Table 1).

Nigeria's agriculture has transitioned from traditional subsistence farming to market-oriented practices due to demographic changes, technological advancements, policy interventions, and economic pressures. This shift has led to increased productivity and food security, prompting a re-evaluation of agricultural policies. In 2013, the Nigerian government launched the Agricultural Transformation Agenda (ATA) to bolster food and nutrition security, generate employment, and distribute wealth by increasing the incomes of smallholder farmers and rural entrepreneurs involved in commodity value chains. The ATA's eleven guiding principles informed the development of the Agricultural Promotion Policy (APP) in 2016 (Ifeoma, 2019). As outlined by Ojong and Anam (2018), the APP's core principles include:

- Private sector leadership: Encouraging the private sector to drive agricultural production.
- Long-term economic growth and security: Ensuring sustained economic development and stability.
- Enterprise development: Promoting the growth of agricultural enterprises.
- Market expansion: Prioritizing domestic and international market development.
- Sustainable resource use: Ensuring the responsible utilization of natural resources.
- Stakeholder involvement: Including all relevant stakeholders in decision-making.
- Accountability: Upholding transparency and accountability in agricultural governance.
- Nutrition: Addressing nutritional needs through agricultural production.
- Sectoral linkages: Fostering connections within and between agricultural sectors.

To complement these policies, the federal government introduced the Growth Enhancement Support Scheme (GESS) program in July 2012. The GESS aimed to distribute 20 million subsidized electronic vouchers over four years (2012-2016), targeting 5 million farmers annually (Ejiogu, 2017; Adenegan et al., 2018; Ibrahim et al., 2018; Olatohun et al., 2019). These vouchers provided farmers with access to subsidized fertilizers and other agricultural inputs, stimulating crop production. While government subsidies have played a role in supporting conventional agriculture, the long-term sustainability of the sector hinges on adopting sustainable practices that address concerns about food quality, health, and environmental impact. In addition, conventional agriculture's chemical inputs cause soil degradation, hindering productivity-boosting policies and compromising long-term sustainability of farming systems, despite inadequate soil conservation measures (AdeOluwa et al., 2017). Conventional agriculture in Nigeria is highly vulnerable to climate change impacts, including erratic rainfall, droughts, and floods (Adeyemo et al., 2015). Policies promoting conventional agriculture often fail to incorporate climate resilience measures, leaving farmers exposed to risks that can undermine the success of policy implementation. Organic farming, which tends to promote biodiversity and soil health, can play a role in climate resilience, but government policies need to reflect this potential (AdeOluwa et al., 2017).

Organic Agriculture Policies in Nigeria

The development of organic agriculture in Africa has gained momentum over the last two decades due to growing demand for organic products and concerns about food security. Nigeria, however, lacks a comprehensive policy to regulate and promote organic agriculture, despite the increasing importance of organic farming globally. A national policy would provide an enabling environment for organic agriculture, ensure quality control, and boost the sector's growth (AdeOluwa, 2021). Non-governmental organizations such as NOAN encourages cooperation amongst stakeholders, including farmers, researchers, policymakers, and consumers, to promote the adoption of organic agriculture in Nigeria (Mgbenka et al., 2015, Babaleye, 2009). By creating recommendations and educating the public about the necessity of government support, NOAN actively promotes the inclusion of organic agriculture in national agricultural policies. Likewise, OAPTIN integrates organic agriculture into academic curricula to support research and education in Nigerian tertiary institutions, providing future agricultural professionals with the information and skills needed for organic agriculture practices (Table1) (Mgbenka et al., 2015, Iyagba and Amesi, 2016). To provide

regionally appropriate methods and solve some difficulties faced by Nigerian farmers, OAPTIN funds research on organic farming practices, soil health, and pest management (Augustine et al., 2013; Atungwu et al., 2016; Adesemowo et al., 2020). Further, to support policies that promote organic agriculture, OAPTIN works with the government, non-governmental organizations, and international organizations such as FAO (Food and Agriculture Organization) and IFOAM (International Federation of Organic Agriculture Movement). Some of these collaborations include participating in national policy debates, gaining technical support from government, creating global standards for the practice of organic agriculture in Nigeria, and pushing for the inclusion of organic agriculture in national agricultural strategies (Mgbenka et al., 2015).

Despite numerous efforts to promote organic agriculture in Nigeria, challenges persist, including limited financing, inadequate awareness, restricted access to organic inputs, and insufficient government support compared to conventional agriculture. Past initiatives, often driven by international organizations and NGOs, have been fragmented and insufficient to significantly impact the industry (Chen et al., 2018). To stimulate the growth of organic agriculture, enhance rural livelihoods, and promote environmental sustainability, government interventions are crucial. The Federal Government of Nigeria should formalize support for sustainable organic agriculture practices by establishing clear principles, standards, and certification procedures within the National Organic Agriculture Policy. These guidelines should address production, marketing, processing, export and import, quality control, training, research, and innovation. In fact, Ume and Bhata (2024) have recently opined that combining branding, price premiums, informal certification, and government subsidies can encourage more farmers to adopt organic farming practices. Beyond providing a legal framework, the policy should emphasize the government's role in supporting research, extension services, and market development. Policymakers should carefully consider the unique needs and challenges of the organic agriculture sector, engaging in dialogue with stakeholders such as farmers' organizations (e.g., All Farmers Association of Nigeria - AFAN), industries, non-governmental organizations (e.g., OAPTIN, NOAN), and international organizations (e.g., IFOAM, FAO)."

Furthermore, organic farming incorporates agroecology principles to fulfil human food and fiber needs while enhancing ecological processes. Nevertheless, intensification and extensification are the two approaches to organic farming (Reganold

and Wachter, 2016) aimed at boosting productivity while enhancing soil health, biodiversity, and ecosystem resilience. Intensification as a sustainable approach to raising agricultural productivity prioritizes ecosystem resilience and soil health by utilizing integrated pest management, crop rotation, and organic fertilizer (Reganold and Wachter, 2016). Intensification strategies aim to enhance agricultural efficiency and sustainability, promoting productivity, resource conservation, and climate resilience, but must be managed cautiously to prevent unintended consequences such as soil degradation or pest outbreaks (Pretty et al., 2018). Conversely, extensification onto previously uncultivated or degraded lands increases the

footprint of organic agriculture (Lambin and Meyfroidt, 2011), but faces issues such as habitat conversion, biodiversity loss, and ecosystem degradation (Altieri, 2018). Organic agriculture takes a holistic strategy that prioritizes biodiversity, soil health, and ecosystem resilience. This approach helps practitioners and policymakers create strategies that strike a balance between productivity, environmental stewardship, (Table 1) and social equality in farming landscapes (Ume and Bahta, 2024). Finally, this review stresses the importance of integrating organic agriculture into national agricultural policies and providing institutional support to scale up organic farming practices in Nigeria.

Table 1: Policy differences between conventional and organic agriculture in Nigeria

Aspect	Conventional Agriculture	Organic Agriculture
Government Support	Through subsidies for mechanization, fertilizers, insecticides, and enhanced crops, the government is offering significant support.	Limited financial support and intervention.
Policy Framework	Established policies focused on maximizing productivity and food security.	Fragmented policies which lack a comprehensive national framework for regulation, promotion, or certification.
Funding	Receives government support and financial incentives.	Receives limited government funding, rely heavily on international donors and NGOs for support.
Extension Services	Strong extension	Weak extension services
Market Development	Policies support access to domestic and export markets through subsidies and infrastructure development.	Underdeveloped market infrastructure with limited policies to encourage certification, branding, and exports.
Adoption and Awareness	Widespread adoption due to government incentives and lower input costs.	Low adoption due to higher costs, limited awareness, and lack of market incentives.
Environmental Considerations	Policies prioritizes productivity, over environmental impacts.	Lacks policies to balance between productivity, and environmental stewardship.

Nigeria's under-resourced agricultural extension services struggle to adequately educate and support farmers, particularly in rural areas, resulting in a lack of necessary resources for effective agricultural policy implementation. Extension services often focus on conventional farming methods, underserving organic farmers due to lack of training, limiting their ability to offer relevant guidance (Emeana et al., 2018). Furthermore, Nigeria's underdeveloped organic market infrastructure hinders farmers' access to local and international markets. Without policies to support market development, including organic certification, distribution networks, and export channels, organic products struggle to reach consumers both in Nigeria and abroad (Christopher et al., 2024; IFOAM, 2021). Organic certification is critical for accessing premium markets, but the high costs associated with certification (inspection fees, compliance costs, etc.)

are a significant barrier, especially for small-scale farmers (Christopher et al., 2024). This limits the economic incentives for farmers to adopt organic practices. Simplified certification processes and financial support are necessary to increase farmer participation.

Since government subsidies for organic farming are limited, most Nigerian farmers struggle to adopt sustainable practices such as crop rotation, composting, natural pest management, and soil health improvement practices. Furthermore, the low comprehension of Nigerian consumers regarding the advantages and sustainable cost-effectiveness of organic products impedes the growth of the market. Currently, products labeled as "organic" in Nigeria often do not adhere to any recognized organic standards, allowing for the potential circulation of fake organic products (AdeOluwa, 2021). Likewise,

organic agriculture confronts hurdles due to restricted financing for research and development into organic practices under varied agronomic conditions, limiting its spread and competitiveness. This explains why organic farmers frequently encounter productivity issues and utilization limits. This is worsened by the lack of a defined national standard for organic farming, which prevents farmers from certifying their products and creates a considerable barrier to policy implementation (Christopher et al., 2024).

Opportunities for Organic Agriculture Development

Despite the numerous challenges, organic agriculture presents several opportunities for Nigeria (Adebisi et al., 2020). The global organic market is expanding, offering Nigeria an opportunity to tap into this growing sector with adequate government interventions, policies and subsidies. Likewise, organic agriculture promotes sustainable farming practices that protect the environment, improve the fertility of degraded soils and improve public health (AdeOluwa, 2021). Finally, increased adoption of organic farming in Nigeria can create employment opportunities, especially in rural areas, by establishing organic farms, processing facilities, and value-added enterprises.

Policy Recommendations

To foster the development of both conventional and organic agriculture, Nigeria must implement the following policy recommendations:

- i. A national policy for organic agriculture should be developed to provide regulatory guidelines for certification, production, and marketing. This policy should align with international standards to enable Nigeria to access global markets.
- ii. Government subsidies and financial incentives for organic inputs, as well as simplified certification processes, should be introduced to support organic farmers.
- iii. Investments in distribution networks, processing facilities, and marketing channels are essential to create a viable domestic and international market for organic products.
- iv. Educational programs on organic farming practices should be integrated into the curricula of agricultural institutions. Extension services should be strengthened to provide training and support to organic farmers.
- v. The private sector should be incentivized to invest in organic agriculture, particularly in areas such as pest management, organic input production, and certification services.

CONCLUSION

Nigeria's agricultural policies historically favor conventional farming for its role in ensuring food security. However, as awareness of the environmental and health benefits of organic agriculture grows, a balanced approach is needed. To create a sustainable agricultural system, Nigeria must integrate organic agriculture into its national policy framework, providing institutional support for research, extension services, and market development. Addressing these challenges will be key to fostering a balanced, productive, and sustainable agricultural sector in Nigeria. Smallholder and rural farmers often lack funding for organic farming, necessitating financial incentives like subsidies for organic inputs. Governments can provide interest-free loans and credit schemes, while partnerships between government, private businesses, industries, and international organizations can establish investment funds for small and medium-sized organic farms. To promote the health, environmental, and economic benefits of organic products, national public awareness campaigns, certification systems, and government regulations are essential. Engaging celebrities, chefs, and social media figures can also increase interest in organic agriculture and attract younger audiences. Furthermore, the Nigerian government should establish standards and certifications for organic farming, collaborate with private and independent bodies, and develop organic food markets to enhance farmers' visibility and consumer demand.

Conflict of Interest

The authors verify that the paper is their own original work, neither having been published in an electronic or conventional source, nor having its copyright held by a third party.

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