

STATE CAPACITY AND AGRICULTURAL PRODUCTIVITY IN SUB-SAHARAN AFRICA: THE ROLE OF SUBSIDY PROGRAMMES IN NIGERIA

¹Obukeni, Clifford Orona
obukenicifford25@gmail.com

&

²Emeh, James Chukwudi
jamesvirge@yahoo.com

^{1,2}Department of Social Sciences (Political Science Section),
Faculty of Arts and Social Sciences,
Federal University of Education, Kontagora, Niger State.

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Abstract

Agriculture remains central to economic development in Sub-Saharan Africa, contributing significantly to Gross Domestic Product (GDP) and employment. Despite its importance, the sector is constrained by low productivity and inefficient resource allocation. In response, governments have implemented various agricultural subsidy programmes to boost output. However, yields in the region remain persistently low. This paper argues that a critical “missing link” in explaining this outcome is state capacity. It examines the relationship between state capacity and agricultural productivity in Sub-Saharan Africa, with specific focus on Nigeria’s subsidy programmes. The objective is to assess how state capacity shapes the effectiveness of subsidy interventions and, by extension, agricultural productivity. The study adopts System Theory and Dependency Theory as analytical frameworks. The System Theory emphasizes the role of institutional coordination, policy implementation, and feedback mechanisms in determining outcomes, while Dependency Theory highlights how historical and structural factors can weaken state institutions and development capacity. The paper relies on secondary data from government reports, policy documents, and academic literature. Findings indicate that where administrative and institutional oversight is strong, subsidy programmes have the potential to improve input access and increase agricultural yields. In contrast, in contexts with weak state capacity, the benefits of subsidies are eroded by mismanagement leakages, and high input costs. The paper concludes that agricultural productivity in Sub-Saharan Africa is less constrained by resource scarcity than institutional capacity. It recommends strengthening of governance and institutional frameworks, ensuring transparency in subsidy allocation and distribution, and establishing independent oversight mechanisms to enhance accountability and program effectiveness.

Keywords: State Capacity, Agricultural Subsidy, Productivity, Governance, Sub-Saharan Africa, Nigeria

Introduction

Agriculture is a cornerstone of economic development in Sub-Saharan Africa, contributing significantly to the region's GDP and employing a majority of its population (World Bank, 2020). Despite its importance, agricultural productivity in many Sub-Saharan countries remains alarmingly low, primarily due to a myriad of challenges including inadequate infrastructure, limited access to financial resources, and poor governance (FAO, 2019). In Nigeria—Africa's most populous nation and one of its largest agricultural producers—these

challenges are particularly pronounced, leading to a persistent gap between potential and actual agricultural output (NBS, 2020).

The ability of a government to effectively implement policies and deliver services to its citizens, plays a crucial role in addressing these challenges (Fukuyama, 2013). A strong state can facilitate agricultural development by providing essential services, such as infrastructure, research and extension services, and market access, which are critical for enhancing productivity (Bates, 1981). However, in Nigeria, issues such as corruption, bureaucratic inefficiencies, and inadequate institutional frameworks have significantly limited the government's capacity to implement effective agricultural policies (Aiyede, 2016). These limitations have profound implications for agricultural productivity, as they hinder the timely and efficient delivery of resources and services to farmers.

To mitigate these challenges, the Nigerian government has introduced various subsidy programs aimed at boosting agricultural productivity. These programs, including the Fertilizer Subsidy Program and the Anchor Borrowers' Program, are designed to lower input costs for farmers and enhance their access to essential resources (Ogunniyi, 2018). While these subsidy initiatives have the potential to increase agricultural output, their effectiveness is often undermined by the very issues of state capacity they seek to address. Studies indicate that without a strong governance framework, subsidy programs can suffer from misallocation of resources, lack of transparency, and corruption (Adebayo, 2020).

This paper aims to examine the intricate relationship between state capacity and agricultural productivity in Nigeria, focusing particularly on the role of subsidy programs. It seeks to answer the following research questions: How does state capacity influence the effectiveness of agricultural subsidy programs in Nigeria? What challenges do these programmes face in enhancing agricultural productivity? By addressing these questions, this research will contribute to a deeper understanding of how strengthening state capacity can improve the impact of subsidy programmes, thereby enhancing agricultural productivity in Nigeria and potentially across Sub-Saharan Africa.

Conceptual Clarifications

Concept of State Capacity

State capacity refers to the ability of the state to design, implement, and enforce policies effectively. It remains one of the most central yet contested concepts in development studies and political economy. At its core is, it refers to the ability of the state to formulate and effectively implement policies, deliver public goods, and enforce rules within its territory. According to Evans (1995), state capacity refers to the ability of the state to implement decisions through a competent and autonomous bureaucracy. This was corroborated by Fukuyama (2013), emphasizing the quality of administration and institutional effectiveness. He suggests that capacity could be measured by the ability to implement basic, universal functions and the professionalization of the bureaucracy and the measurable expanse of the state (such as its regulatory abilities).

In the midst of these differing and often overlapping definitions, Hendrix (2010) observes that most definitions of state capacity include one or more of the themes of, ‘military power, bureaucratic/administrative capacity, and the quality and coherence of political institutions’. In agriculture, state capacity determines the provision of public goods such as extension services, infrastructure, and input distribution.

Broadly speaking, state capacity encompasses the following:

Administrative capacity –this is the ability to implement policies effectively through bureaucratic institutions. A capable bureaucracy can facilitate the delivery of services and ensure that programmes reach their intended beneficiaries (Evans & Rauch, 1999).

Fiscal capacity – ability to generate and allocate resource or revenue efficiently. A state needs adequate financial resources to implement programmes, particularly in sectors like agriculture that require substantial investment (Khan, 2010).

Political Capacity – This entails the legitimacy and authority of the state to govern. A government must be perceived as legitimate by its citizens to effectively mobilize resources and implement policies (Menkhaus, 2010).

Regulatory Capacity: ability to enforce laws and regulations that govern economic activities, including agriculture. This involves creating an enabling environment for private sector participation and investment (North, 1990).

Concept of Agricultural Productivity

Agricultural productivity refers to the efficiency with which inputs are converted into outputs. It is the efficiency with which inputs are transformed into outputs in agricultural production (Coelli, Rao, O’Donnel, and Battese (2005). According to FAO (2023), it is typically measured as the ratio of agricultural output (such as crops and livestock) to the inputs used (such as land, labour, and capital). A high productivity level indicates a more efficient use of resources, leading to increased food security, improved livelihoods, and economic growth.

According to the Food and Agriculture Organization (FAO), agricultural productivity can be influenced by several factors, including technology, input use, market access, and institutional frameworks (FAO, 2015). In Sub-Saharan Africa, agricultural productivity has historically been low due to a combination of these factors linked to weak institutions, limited technology adoption, and inadequate public investment, as well as challenges such as climate variability, limited access to credit, and inadequate infrastructure (World Bank, 2020).

Concept of Subsidy Programs

Subsidies are government interventions that reduce the cost of inputs such as fertilizers, seeds, or credit. In Nigeria, fertilizer subsidies have been the most prominent. They are financial aids provided by governments to support specific sectors of the economy, often aimed at promoting agricultural productivity, stabilizing prices, and ensuring food security. In the context of agriculture, subsidies can take various forms, including cash payments, tax reductions, and direct provision of inputs such as fertilizers, seeds, and machinery (Anderson & Valenzuela, 2008).

The primary objectives of agricultural subsidy programmes include:

Increasing Agricultural Outputs: by making inputs more available, subsidies encourage farmers to use more resources, leading to higher productivity (Dabalén, et al, 2016).

Enhancing Food Security: Subsidies help stabilize food prices and increase the availability of food, which is crucial for low-income population (FAO, 2015).

Supporting Rural Livelihoods: By boosting agricultural productivity, subsidies can enhance the income and livelihoods of rural farmers (Ogunniyi, 2019).

Types of subsidy Programs

Input Subsidies: These are targeted at reducing the costs of agricultural inputs. In Nigeria, the Fertilizer subsidy Programme is an example, providing fertilizers at reduced prices to smallholder farmers (Ojo, 2017).

Price Support Subsidies: These subsidies ensure that farmers receive a minimum price for their products, protecting them from market fluctuations. This is often implemented through mechanisms such as food procurement policies (World Bank, 2019).

Direct Income Support: These programmes provide cash transfers or income support to farmers, by helping them cover costs associated with production and living expenses (Adebayo, 2020).

Theoretical Framework

System Theory

System Theory originated in the natural and social sciences as an attempt to explain how different parts of a structure interact to produce outcomes. The theory is primarily associated with the work of Ludwig von Bertalanffy, an Austrian biologist who developed the concept of General Systems Theory in the 1940s and 1950s. Bertalanffy argued that society, organizations, and institutions should be understood as systems composed of interrelated and interdependent parts (Bertalanffy, 1968).

The theory was later expanded in political science and sociology by scholars such as Talcott Parsons and David Easton. Easton (1965) particularly applied systems analysis to political science by conceptualizing the political system as a structure that receives inputs from society, processes them, and produces outputs in the form of policies and decisions.

In development studies and public administration, System Theory became useful for analysing governance, institutional coordination, policy implementation, and state performance. The theory provides a framework for understanding how government institutions, agricultural agencies, farmers, markets, financial institutions, and subsidy programmes interact to influence agricultural productivity.

Basic Assumptions of System Theory

System Theory is based on several fundamental assumptions:

- The theory assumes that society is made up of interconnected institutions and structures that depend on one another for stability and functionality. In agriculture, government ministries, extension agencies, farmers, banks, markets, and subsidy programmes function as interconnected components.
- A change in one component of the system affects other components. For instance, ineffective fertilizer subsidy distribution can reduce crop yields, weaken food security, increase rural poverty, and affect national economic growth.

- According to Easton (1965), systems receive inputs such as demands, resources, and support from society and convert them into outputs such as policies, programmes, and services. For example, Inputs: budget allocations, farmer demands, donor support, policy directives; Outputs: fertilizer subsidies, extension services, irrigation schemes, and credit facilities.
- Systems depend on feedback to improve performance. Farmers' responses to subsidy programmes help government evaluate whether policies are effective or require modification.
- Systems seek equilibrium and adapt to environmental changes. Agricultural institutions must adjust to inflation, climate change, insecurity, and population growth to maintain productivity.

Relevance of System Theory to the Study

System Theory is highly relevant to the study for several reasons.

- The theory helps explain how state capacity depends on the coordination of institutions responsible for agricultural policy implementation. Effective subsidy programmes require collaboration among ministries of agriculture, financial institutions, extension agencies, and local governments.
- System Theory provides a framework for analysing how agricultural inputs move through institutional channels from government to farmers. Weak coordination or corruption within the system can disrupt policy outcomes.
- Agricultural productivity is viewed as the product of interactions among several variables including subsidy distribution, infrastructure, extension services, security, and market access.
- The theory emphasizes policy feedback mechanisms. Nigeria's subsidy reforms, such as the electronic-wallet fertilizer distribution system introduced under the Growth Enhancement Support Scheme, can be analysed as attempts to improve system efficiency and accountability.
- The theory explains how institutional weakness, bureaucratic inefficiency, and poor monitoring reduce state effectiveness in implementing subsidy programmes.

Criticisms of System Theory

Despite its usefulness, System Theory has several criticisms.

1. Critics argue that the theory focuses too much on order and stability while neglecting conflict, inequality, and power struggles in society (Ritzer, 2011).
2. The theory inadequately explains how elites and political actors manipulate agricultural subsidy programmes for personal or political gain.
3. Some scholars criticize the theory for being too abstract and difficult to apply empirically in developing countries where institutions are weak and informal structures dominate.
4. System Theory assumes institutions work harmoniously, whereas in many Sub-Saharan African countries corruption, patronage, and bureaucratic inefficiency weaken institutional performance.
5. The theory pays insufficient attention to global economic structures, colonial legacies, and international dependency that affect agricultural development in Africa.

Dependency Theory

Dependency Theory emerged in the 1950s and 1960s as a critique of modernization theory and Western development models. The theory developed mainly in Latin America through the works of economists and sociologists associated with the United Nations Economic Commission for Latin America (ECLA).

The intellectual foundation of the theory is linked to scholars such as Raúl Prebisch, who argued that the global economic system is structured in ways that disadvantage developing countries. Dependency theorists maintained that underdevelopment in Africa, Asia, and Latin America is historically linked to colonialism, exploitation, and unequal economic relations with developed countries.

The theory was further advanced by scholars such as Andre Gunder Frank, Samir Amin, Fernando Henrique Cardoso, and Walter Rodney.

Basic Assumptions of Dependency Theory

The theory assumes that the world economy is divided into developed “core” countries and underdeveloped “peripheral” countries.

Dependency theorists argue that Africa’s poverty and weak agricultural systems are products of colonial exploitation and continued neo-colonial economic relations.

Developing countries rely heavily on foreign technology, imported agricultural inputs, loans, and donor-funded programmes, which limits self-sustaining development.

Peripheral countries export raw materials and import manufactured goods at unequal exchange rates, resulting in economic dependency and weak industrialization.

The theory argues that local political elites often cooperate with foreign interests in ways that sustain dependency and weaken national development.

Relevance of Dependency Theory to the Study

Dependency Theory is highly relevant to analysing state capacity and agricultural productivity in Nigeria and Sub-Saharan Africa.

- The theory helps explain why many African countries remain dependent on imported fertilizers, machinery, agrochemicals, and foreign agricultural technologies.
- Dependency theorists argue that colonial economic structures weakened African states and made them externally dependent, thereby limiting their ability to formulate autonomous agricultural policies.
- Nigeria’s subsidy programmes often rely on foreign loans, imported inputs, and donor influence. This reflects dependency on external economies rather than self-reliant agricultural development.
- The theory links low agricultural productivity to unequal global trade relations that disadvantage African farmers and reduce investment in local agricultural industries.
- International financial institutions such as World Bank and International Monetary Fund have historically influenced agricultural reforms and subsidy policies in Africa through structural adjustment programmes.

Criticisms of Dependency Theory

- Critics argue that the theory places too much blame on external forces while ignoring internal factors such as corruption, poor governance, ethnic conflict, and weak leadership.
- The theory is criticized for reducing development problems mainly to economic exploitation while neglecting culture, institutions, and innovation.
- Dependency Theory struggles to explain how some formerly dependent countries such as South Korea and Singapore achieved rapid development.
- The theory tends to underestimate the role of domestic policy reforms, entrepreneurship, and institutional development in promoting growth.
- Critics argue that the theory portrays developing countries as passive victims of global capitalism rather than active agents capable of transformation.

Conclusively therefore, System Theory and Dependency Theory provide important theoretical lenses for analysing State Capacity and Agricultural Productivity in Sub-Saharan Africa: The Role of Subsidy Programmes in Nigeria. System Theory explains how institutional coordination, policy implementation, and feedback mechanisms influence agricultural productivity, while Dependency Theory highlights how historical exploitation, external dependence, and unequal global economic relations weaken state capacity and agricultural development. Together, the two theories provide both internal and external perspectives for understanding the challenges and opportunities associated with subsidy programmes and agricultural transformation in Nigeria.

Empirical Review

Nexus between State Capacity and Agricultural Productivity in Sub-Saharan Africa

Empirical evidence shows a strong relationship between governance quality and agricultural productivity. Countries with higher levels of political rights and institutional stability tend to experience greater productivity growth. The following are the relationship between State Capacity and Agricultural productivity in Sub-Saharan Africa:

Policy Formulation and Implementation: Effective policy formulation is essential for enhancing agricultural productivity. Governments with strong administrative capacities can design and implement policies that support farmers, such as subsidies for inputs, investment in research and development, and infrastructure development (Binswanger-Mkhize, 2012). For instance, countries like Rwanda have made significant strides in agricultural productivity through strategic government policies focused on agricultural development, largely due to strong state capacity (NISR, 2020).

Infrastructure Development: State capacity affects infrastructure development, which is critical for agricultural productivity. Poor infrastructure such as roads, storage facilities, and irrigation systems, etc, can limit farmers' access to markets and inputs, reducing productivity (World Bank, 2019), in countries like Ethiopia, investments in rural infrastructure have been linked to improved agricultural outcomes, demonstrating how state capacity can facilitate better access to resources (Dercon& Gollin, 2014).

Extension Services and Technology Transfer: Agricultural extension services are vital for educating farmers about best practices, new technologies, and sustainable farming methods. States with strong capacities can establish and maintain effective extension services that enhance agricultural productivity (Anderson & Feder, 2007). For example, the Nigerian government's Agricultural Transformation Agenda aimed to increase productivity through improved extension services, though it faced challenges related to implementation and resource allocation (Adebayo, 2020).

Regulatory Environment: A strong regulatory environment can enhance agricultural productivity by ensuring food safety, quality standards, and fair market practices. Governments with robust regulatory frameworks can create an enabling environment for investment and innovation in agriculture (Fafchamps & Minten, 2019). However, weak regulatory capacity can lead to inefficiencies and corruption, thereby undermining agricultural productivity.

Political stability and Governance: political stability and good governance are essential for fostering agricultural productivity. Conflicts and political instability can disrupt agricultural activities and deter investment (Collier & Hoeffler, 2004). For instance countries like South Sudan, ongoing conflicts has severely impacted agricultural productivity and food security, highlighting the importance of state capacity in maintaining stability (World Food Programme, 2019).

Challenges to State Capacity in Sub-Saharan Africa

Corruption and Mismanagement: corruption can undermine state capacity by diverting resources away from agricultural development. Poor governance practices can lead to inefficiencies in policy implementation and limit the effectiveness of subsidy programs aimed at boosting productivity (Transparency International, 2019).

Limited Financial Resources: Many Sub-Saharan African governments face budget constraints that limit their ability to invest in agriculture and strengthen institutions. The reliance on external aid can also impact the sustainability of agricultural policies (World Bank, 2019).

Capacity Gaps in institutions: Weak institutions often lack the expertise and human resources necessary to implement effective agricultural policies. Capacity building efforts are essential for strengthening these institutions to enhance agricultural productivity (Yukseki & Van der Molen, 2018).

State Capacity and Agricultural Subsidy Programs in Nigeria

The interaction between state capacity and agricultural subsidy programs are the following:

Bureaucratic Efficiency: one of the key factors influencing the effectiveness of subsidy programs is the bureaucratic capacity of the state. According to Fukuyama (2013), effective bureaucracies are essential for implementing and managing public policies. In Nigeria, the capacity of agricultural ministries and agencies has often been criticized for inefficiency, which hampers the execution of subsidy programs. The inefficiencies can lead to delays in disbursements and misallocation of funds, reducing the intended benefits to farmers (Umar & Adamu, 2018).

Regulatory Framework: The regulatory environment in which subsidies operate is another critical determinant. Olukosi and Ogungbile (2005) highlight that weak regulatory framework can lead to corruption and misuse of funds, undermining the objectives of subsidy programs. In Nigeria, the complexity and lack of coherence in agricultural policies often result in overlapping responsibilities among agencies, leading to inefficiencies and lack of accountability.

Monitoring and Evaluation: effective monitoring and evaluation systems are vital for assessing the impact of subsidy programs. Mazzucato (2018) argues that without robust monitoring and evaluation mechanisms, governments cannot gauge the success or failure of their interventions. In Nigeria, inadequate monitoring and evaluation frameworks result in lack of data-driven decision-making, which affects the continuous improvements of subsidy programs (Adebayo, et al. 2019).

Political Will and Commitment: Political will significantly influence state capacity and consequently the effectiveness of subsidy programs. Bates (1981) notes that political stability and commitment to agricultural development are essential for the success of subsidy interventions. In Nigeria, changing of political dynamics often lead to inconsistent agricultural policies, which create uncertainty for farmers and limit the effectiveness of subsidies.

Stakeholder Engagement: Engagement with farmers and local stakeholders is essential for the successful implementation of subsidy programs. According to Chukwu et al. (2020), effective communication and involvement of beneficiaries can enhance the targeting and delivery of subsidies. However, weak state capacity often lead to insufficient engagement, resulting in misalignment between the design of programs and the actual needs of farmers.

Evaluation of Agricultural Subsidy Programs in Nigeria and Sub-Saharan Africa

One of the most significant studies on agricultural subsidies in Nigeria is conducted by Ogunniyi (2018), which evaluates the impact of the Fertilizer Subsidy Program on productivity among smallholder farmers. The study found that while the program increased access to fertilizers and improved yields, the benefits were unevenly distributed due to corruption and inefficiencies in the distribution process. The study emphasizes that effective targeting of beneficiaries is crucial for maximizing the impact of subsidy programs.

Similarly, Duflo et al, (2011) examined the effectiveness of agricultural subsidies in Kenya, providing insights that are relevant to Nigeria. Their research indicated that while subsidies could lead to increased productivity, they often required complementary investments in infrastructure and education to be truly effective. This suggests that Nigeria's subsidy programs must be part of a broader agricultural strategy that includes strengthening state capacity and governance.

Adebayo (2020) investigated the challenges facing the Fertilizer Subsidy Program in Nigeria, highlighting issues such as bureaucratic inefficiencies, lack of transparency, and misallocation of resources. The study concluded that these challenges significantly hinder the program's effectiveness, resulting in limited improvements in agricultural productivity. Adebayo's findings align with those of Aiyede (2016), who discussed the broader issue of state capacity in Nigeria and its detrimental effects on agricultural policy implementation.

Findings of the Study

Firstly, the study reveals that state capacity is crucial for effective policy implementation in agriculture. Aiyede, (2016) emphasizes that the ability of government to enforce agricultural policies directly impacts productivity levels. Regions with effective governance structures tend to experience higher agricultural outputs.

Secondly, the study shows that only a fraction of intended beneficiaries – primarily smallholder farmers, benefit from these subsidies, leading to disparity in agricultural development. According to Ogunniyi (2018), while subsidy programs such as the Fertilizer Subsidy Program, are designed to increase agricultural productivity, their effectiveness is compromised by issues such as corruption and mismanagement.

The study finds that corruption is a pervasive issue that undermines the objectives of subsidy programs. Misallocation of resources often occurs, with funds intended for agricultural support diverted for personal gains, thus limiting access for those who genuinely need assistance (Adebayo, 2020).

Finding shows that bureaucratic delays significantly hinder the timely delivery of services and inputs to farmers. According to World Bank (2013), the inefficiencies in the bureaucratic system result in prolonged wait times for farmers to access subsidies, which diminishes the intended benefits and stunts productivity growth.

Furthermore, the study identifies inadequate infrastructure as a major barrier to agricultural productivity. NBS (2020) reports that poor road networks and insufficient irrigation systems limit farmers' ability to utilize subsidized input effectively, ultimately impacting yields and market access.

Finally, the finding reveals that political instability and conflicts create an environment where effective policy implementation is nearly impossible, further impeding agricultural productivity. Menkhaus (2010) discusses how ongoing political instability and conflict, particularly in northern Nigeria, disrupts agricultural activities and displace farming communities.

Conclusion

Agricultural productivity in Sub-Saharan Africa is closely tied to state capacity. In Nigeria, subsidy programs have the potential to enhance productivity but are often undermined by weak institutional frameworks. The evidence suggests that subsidies alone are insufficient; their success depends on the broader governance environment. Strengthening state capacity is therefore essential for achieving sustainable agricultural transformation and poverty reduction.

Recommendations

To improve agricultural productivity through subsidies, Nigeria should:

- The Nigerian government should strengthen the institutional and administrative capacity of agencies responsible for implementing agricultural subsidy programmes, so as to improve coordination among the Federal Ministry of Agriculture, state ministries of agriculture, extension agencies, local governments, and financial institutions, and enhance transparency, accountability, and timely delivery of agricultural inputs to farmers.
- Subsidy programmes should primarily target smallholder and rural farmers who constitute the majority of agricultural producers in Nigeria and Sub-Saharan Africa, and targeted interventions should consider gender, youth inclusion, and vulnerable farming communities to ensure equitable access to agricultural support.
- Regular assessment of subsidy programmes should be institutionalized to measure effectiveness, identify implementation challenges, and improve policy outcomes through independent monitoring bodies, civil society organizations, and farmer associations to ensure accountability.
- Government should strengthen rural security through improved policing, community security initiatives, and conflict resolution mechanisms to create a safe environment for farming activities.
- Government should establish transparent monitoring and evaluation mechanisms through digital technologies such as electronic-wallet systems, biometric registration, and direct farmer databases should be expanded to reduce corruption, diversion, and political manipulation associated with subsidy programmes, and ensure that subsidies reach genuine smallholder farmers.

- Government should complement subsidy programmes with investments in rural infrastructure such as roads, irrigation systems, storage facilities, electricity, and transportation networks, so as to reduce post-harvest losses, lower production costs, and increase farmers' access to markets.
- There is a need to recruit, train, and adequately fund agricultural extension officers to provide farmers with modern farming knowledge, climate-smart agricultural practices, and technical support, as effective extension services will help farmers utilize subsidized inputs efficiently and improve productivity.
- Nigeria should encourage local production of fertilizers, seeds, agrochemicals, and farm equipment through public-private partnerships, tax incentives, and support for agro-industrial development to reduce dependence on imported agricultural inputs, and reduce costs, improve availability, and strengthen national agricultural self-reliance.

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