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Can agricultural protectionist policies help achieve food security in Nigeria?

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This study mapped the dynamic interaction of narratives regarding Nigeria's pursuit of rice self-sufficiency and related trade policies since the 1970s to explore whether agricultural protectionist policies can help achieve food security in Nigeria. Developing agricultural trade policies that simultaneously secure imported food supplies and protect domestic agricultural development is a challenging task. Nigeria's protectionist policies have a controversial agenda. Few studies have investigated the dynamic process of rice production and trade policy from a historical viewpoint; our study fills this gap. Through mapping Nigeria's pursuit of rice self-sufficiency over the past 50 years, we found that seesawed trade policy parallels complex rice development, leaving imported rice dependence unchanged. Regardless of when policies switch to trade protection or liberalization, the procedure does not directly lead to increased rice production. Since much exploration is needed regarding how to achieve food security in Nigeria, we also identify three new dimensions for future food security research based on our findings' optimal recommendations.

KEYWORDS

trade protectionism, food security, food system, sustainable development, Nigeria, policy maker

1. Introduction

Turmoil in the international political landscape has raised global food prices, leaving millions of people trapped in poverty and hunger. With international consensus regarding the United Nations' 2030 Sustainable Development Goals, governments worldwide have acted to address food system dependency. International trade and global food value chains are among the most critical components of global agriculture and food systems. According to the State of Food Security and Nutrition in the World 2022,[1] the number of hungry people reached 828 million in 2021, including 278 million people in Africa.

Food security is usually concerned with the concept of food self-sufficiency both in academic and political areas. In the wake of the international food crisis in 2007, food

1 FAO, The State of Food Security and Nutrition in the World 2022, FAO; IFAD; UNICEF; WFP; WHO. Retrieved from https://policycommons.net/artifacts/2483950/the-state-of-food-security-and-nutrition-in-the-world-2022/3506270/~on 05 Feb 2023. CID: 20.500.12592/5fqf9k.

self-sufficiency has received increasing attention. Food self-sufficiency is often described in policy practice as the direct opposite of international food trade (Clapp, 2017). According to the FAO, "the concept of food self-sufficiency generally refers to the extent to which a country can meet its food needs from its own production" (FAO, 1999). The debates about food self-sufficiency often fall between economic reasoning and political issues. On the one hand, proponents of food self-sufficiency defend how countries can protect themselves from the vagaries of world food markets by increasing their reliance on domestic food production. On the other hand, the opposition argues that putting politics ahead of economics in food policy is costly for countries.

Nigeria is the most populated and economically significant nation in Africa and is one of the world's leading rice consumers, producers, and importers (Food Agriculture Organization, 2017). As a primary staple food in Nigeria (International Food Policy Research Institute, 2020), rice is crucial for achieving food and nutrition security. Nigeria's abundant agricultural and natural resources give the government a rustic edge; however, owing to rapid population growth, urbanization, and increasing per capita income, domestic rice production cannot meet the surging demand. How did this trend develop? For too long, high revenues from oil and other industrial sectors led the Nigerian government to ignore the importance of rice production and the danger of heavy dependency on importation. The influx of imported rice, with its competitive price and better quality, leaves domestic rice brands disadvantaged. Successive Nigerian Governments have adopted several plans to cope with this. Since the 1970s, the Nigerian government has implemented several protectionist policies, including rice import restrictions, foreign exchange controls, total bans on importation, and border closures.

However, previous research has shown that protectionist policies have not completely reversed the imported rice trend. Nigeria's protectionism policies have failed to reverse importation dependency. For example, Uche et al. (2021) found that the Nigerian rice sector has not achieved the expected rapid development. In addition, protectionist trade policies have led to a series of adverse effects that leave many groups suffering (Ugwuja and Chukwukere, 2021). For example, Obi-Egbedi et al. (2013) asserted that Nigeria's manufacturing and service sectors suffer, and social welfare has declined. Consequently, rice-related policies have attracted much attention and controversy, but few studies have examined rice production and trading policies from a historical perspective by viewing them as a dynamic process. Our study fills this gap by exploring agricultural protectionist policies' effects on Nigerian food security by mapping the dynamic interaction of Nigeria's pursuit of rice self-sufficiency and related trade policies since the 1970s.

Our findings showed that (1) seesawed trade policies parallel complex rice development, leaving rice dependence unchanged; (2) whether policies switch to trade protection or liberalization, the change does not directly lead to increased rice production; and (3) excessive liberalization could lead to fewer protections for domestic producers, while excessive protectionism could intervene the market system. These results suggest that food security cannot be achieved solely through agricultural trade policy.

2. Rice importation, rice production, food security, gainers, and losers under trade protectionist policies

2.1. Seesawed rice importation over the past 50 years

Some scholars assert that trade promotes food security (FAO, 2003), which includes food sufficiency, food access, and stable prices. Nigeria's pendulous rice trade and sustained promotion policies on rice production run parallel to its path to food security. However, Nigeria has struggled to achieve rice self-sufficiency (Figure 1). Our review of the 50-year rice importation policy history found that Nigeria's rice development has followed protectionist trade policies and an increasingly radical production strategy. The seesawed trade policies are parallel to domestic rice development, leaving rice dependence unchanged. We also found contradictions between the rice strategy and food security, such as (1) shifting importation tariffs lead to food price fluctuations that disrupt the domestic rice market; (2) trade quota policies with large corporations create a lending environment that drains benefits meant for smallholder farmers; and (3) illegal importation and management issues create additional challenges.

The first rice production and trade policy phase were characterized by attention shifting from crude oil to crop production. A surge in rice importation resulting from significant petroleum export earnings deepened Nigeria's dependence on imported rice (Aliu, 2018). An intervention affected domestic rice production through Nigeria joining the green revolution and introducing an importation quota policy.

The second phase was a structural adjustment program implemented following the 1980s economic crisis, where Nigeria implemented an outright ban on imported rice. However, the plan implemented a set of structural adjustments that were "without fact" (Mosley, 1992). Agricultural production's average annual growth rate jumped from 2.6% in the 1981–1985 period to 10% during the 1986–1990 period. However, it fell to 4.7% in the 1990–1995 period, with a concurrent regime change in 1993 (Ileso, 2001).

The third phase was distinguished by seesawed importation policies, with floating rice tariffs and a national-level strategy plan for rice production. With the People's Democratic Party's success, President Olusegun Obasanjo launched the National Economic Empowerment and Development Strategy, which encompassed poverty reduction, employment, wealth growth, and value (National Planning Commission, 2004). The policy framework also set quantitative targets for various sectors, including a 95% food self-sufficiency rate by 2007. The rice production volume of 4.8 million tons in 2007, up from 3.3 million tons in 2000, fell short of the 9.8 million ton goal (Central Bank of Nigeria, 2011); hence, rice importation was still necessary to meet demand.

In the fourth phase, President Buhari promoted a full-scale rice revolution. Alongside a land border closure in 2019,

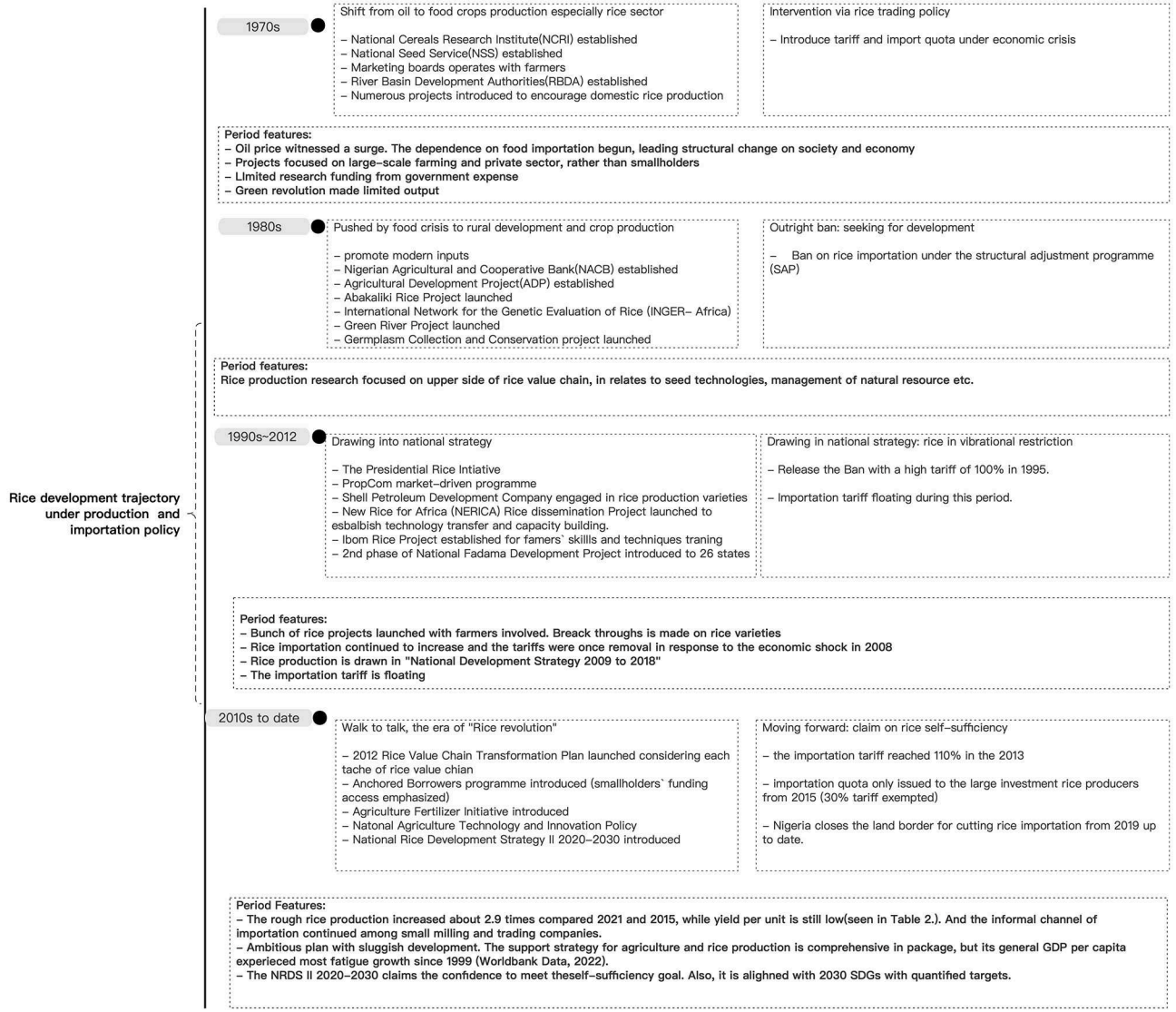

FIGURE 1
The rice development trajectory intendes to help grasp the evolution of rice production policies from the formation of a national strategic framework in Nigeria since 1970. At the sametime, the rice importation policy is illustrated along the domestic rice development footprint. In general, it outlines the change of rice narratives in Nigeria through the past decades. This is of great significance for current policy adjustment or decision-making, it highlights, first, before the 1990s, the emphasis on food was due to international oil fluctuations, not an active strategic plan. International agricultural cooperation has been carried out extensively. But the projects are fragmented. Third, rice is becoming the centerpiece of National Strategy. The top-level design of the National Agricultural Development Strategy has aligned with the United Nations 2030 Sustainable Development Goals. The framework sets more ambitious targets for the future of rice development. Source: the information collected and compiled is based on multiple studies (Emodi and Madukwe, 2008; Terwase and Madu, 2014; Gyimah-Brempong et al., 2016; Abbas et al., 2018; Aliu, 2018; Theresa et al., 2020; Muhammed and Iliyasu, 2021).

rice self-sufficiency took a step forward with projects launched under the Agriculture Promotion Policy. Noticeably, different from the past, a comprehensive national agricultural framework guided rice reform from a top-level policy design. However, rice production and research projects were still fragmented. An emphasis on comparative advantage, climate change, and agricultural value chain was attractive to investors (Statehouse of Government Nigeria, 2016). In 2016, the net foreign direct investment inflow surged to its highest level; the reported inflow in 2019 was 2.31 billion U.S. dollars (The World Bank, 2022a,b).

2.2. Food security under the trade protectionism policy: Long way and forward

Figure 1 shows Nigeria's rice production trajectory over the past 50 years. Rice farming initiatives in the early 1970s established national crop-growing support authorities, including the National Seed Service, but government investment in this stage was generally low. The rice importation ban in the mid-1980s did not result in consistent production development (Figure 2). The ban period (1986–1995) (Ogundele and Okoruwa, 2006) showed a more

drastic change in rice production. The focus at that time was primarily on resource management and technological input in the early rice value chain nodes. The frequent regime changes between the 1990s and early 2010s rolled out inconsistent rice policies. Various rice development programs have been launched since 1990, with particular emphasis on technology transfer and farmer training. Progress on improvement of rice seeds through international aid projects was approved (Maji et al., 2007), but public spending on the technology and investment needed to boost production was woefully inadequate. The average yield in the 1980s, 1990s, and 2000s was 20,710.4 hg/ha, 17,425.4 hg/ha, and 14,868.1 hg/ha, respectively (FAOSTAT, 2023). Despite abundant importation and unrecorded rice smuggling, food sufficiency was not achieved. The rice development narrative did not take comprehensive action on specific projects until 2010.

In the early 21st centry, it is found that the increase in rice production is resulted from an expansion of land cultivation, with subtle improvements in yield (Akpokodje et al., 2001). More challenges emerged with a surging population, which increased rice demand. From the 1980s to 2014, the production and per capita rice occupation were both stepping a difficult pavement (Figure 2). With the National Development Strategy from 2009 to 2018, Nigeria focused on rice as a strategic crop. In 2015, President Buhari kick-started a new era of the "full rice revolution." Rice yield capacity from 2015 to 2020 showed a slow but inconsistent increase; in 2018, the yield reached the highest record at 26,709 hg/ha but then dropped to 17,479 hg/ha (FAOSTAT, 2022). When President Buhari took office in 2015, the more prominent growth in production was in line with the domestic rice boost and protectionist trade policy. A sharp decrease in imported rice was evident, from 479,810 tons in 2015 to 37 tons in 2019, but importation increased again to 1,512 tons in 2021 to fill the domestic demand under waves of international conflict and COVID-19 (UN Comtrade Database, 2022). Food security has more implications at its four levels of availability, access, utilization, and stability. Food trade security has been affected to varying degrees. In terms of trade, although countries' export control measures are justified in light of the global public health crisis, rice also contributes to increased instability in international food trade chains (Hongyuan and Jing, 2022).

Current domestic rice production still faces challenges at all rice value chain nodes. Aging farmers and a lack of young farm laborers were noted in the NRSD II (Federal Ministry of Agriculture Rural Development, 2016). Lack of financial support was also a prominent common issue (Omofonmwan and Kadiri, 2007; Osanyinlusi and Adenegan, 2016; Kosemani and Bamgboye, 2020). Agricultural development and technological innovation became priorities with the introduction of the National Agricultural Technology and Innovation 2022–2027. In addition to agricultural improvement, the policy addresses job creation for Nigerians. Rapu's (2016) evaluation of sample states showed that actual access to mechanization, variable seeds, and fertilizer was very low. Even in Nigeria's large-scale rice farms, industrialization constraints include credit accessibility, lack of repair services, lack of improved infrastructure, and inadequate complementary inputs owing to high electricity and fuel costs (Mohammed et al., 2019). The stagnated rice yield capacity since 2015 has also drawn international organizations' attention. To reduce production losses and improve food security, the Consultative Group on International Agricultural Research studied rice mechanization in north-central Nigeria to identify yield losses under different technologies (Axman, 2021).

The effectiveness of current policies remains an issue. First, the rice import quota strategy of opening importation to large investors does not benefit small- and medium-sized rice farmers. Profits from selling imported rice that is invested in reproducing local rice cannot be guaranteed. Second, the border closure since 2019 coincided with international disputes over the COVID-19 pandemic and Russia–Ukraine conflict. Reduced food yield seriously threatens food security. In addition, rice smuggling under border closures raises questions regarding rice variety and consumers' preferences. The highest-rated rice selection criteria are whiteness and purity (Ogundele, 2014). Moreover, tighter border controls have significantly reduced customs clearance efficiency (Ugwuja and Chukwukere, 2021); detaining goods is not conducive to commodity trade flow and results in food expiration. Hence, policies that were designed to encourage rice cultivation have left farmers facing rising prices for material inputs (Nelson, 2020). These issues reflect the challenges of increasing yield capacity.

2.3. Other gainers and losers under trade protectionist policies

Although the need for trade liberalization has been recognized in the global north since the early twentieth century, protectionist trade policies are still used to protect the domestic market from competitors (Erokhin et al., 2014). The principle of trade liberalism has been widely accepted by the World Trade Organization and the coalition of nations. Developing countries are still, to some extent, dependent on the global market but are increasingly important members of the international food value chain.

Nigerian farmers are encouraged to cultivate commercial rice and build their brands. Large corporations and governments may both be gainers under the current rice importation quota policy, leaving smallholders and millers behind. Long-term corruption is bred by enterprises' and governments' rent-seeking space regarding the importation quota (Karkare and Odijie, 2022). Imported rice from Thailand costs far less than the rice produced in Nigeria because of high production costs, such as transport and electricity (The Guardian, 2015). When importers exceed the quota and flood the market with imported rice, local rice goes unsold. In addition, companies might sell import quotas to traders who do not contribute to local rice investment (Mayah, 2015). Access to data and information on food security in Nigeria is another significant issue. Early studies showed inconsistent statistical results regarding the country's agricultural production (Mosley, 1992). The 2020 COVID-19 pandemic adds hardship to data collection because it limits individuals', traders', and institutions' (such as foreign-invested enterprises) ability to obtain reliable information for their business practices.

Nigeria's rice trade policy somewhat contradicts regional and international agreements. Nigeria is involved in the Economic Community of West African States, the African Continental Free Trade Area, and the World Trade Organization. Trade protectionism initiatives may harm international trade,

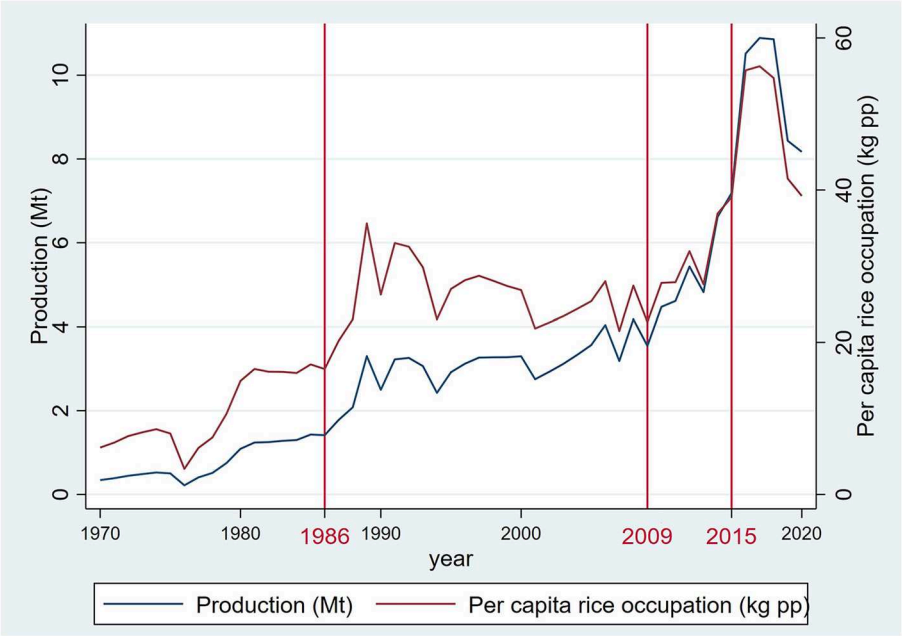

FIGURE 2
Rice production and per capita rice occupation in Nigeria from 1970 to 2020. Per capita rice occupation is computed by the authors with data of rice scouring from "Nigeria: Grain and Feed Update" on USDA (https://www.fas.usda.gov/data/nigeria-grain-and-feed-update-5).

cooperation, and investment consensus. In the African Continental Free Trade Agreement, tariff barriers on rice imports are expected to impact leading rice exporters (Thailand and India), which could lead to conflict and trade reprisals between nations.

3. Conclusion for building a future research agenda

Food security cannot be achieved solely through agricultural trade policy. Safeguarding food security involves environmental, social, economic, and political stability factors. These factors affect the entire food production chain both domestically and internationally to varying degrees. With its unique historical practice, Nigeria has shown the world a tortuous food security road. Rice, as a centerpiece of national strategy, draws on the comprehensive national agricultural development framework. Domestic food value chains are already part of global value chains. Nigeria's dependence on staple food importation is not unique among African countries, many of which still confront complex challenges, such as emerging global trading protectionism that interrupts the global food value chain. The issue of food security calls for more prudent and pragmatic policies in African countries. The upcoming 2023 election could place food strategy high on the agenda. Nigeria's policy practice predicts its policy trajectory, drawing on illuminating lessons for policy decisions in the context of global challenges. Reviewing and elaborating on Nigeria's rice development trajectory and the dynamics between rice production and trading policy provide a focus for future research questions. We posit three dimensions for further research.

First, the consistency of rice or food security policies under regime changes deserve more attention and more reality-oriented considerations. Nigeria has long faced challenges associated with international oil volatility and regime changes. A national development framework for agricultural policy is critical to guide the country's overall direction, goals, and specific blueprints. Achieving food self-sufficiency remains a priority for Nigeria's national food security. In terms of trade policy, protectionism, and liberalism are not binary issues. It is necessary to conduct more evidence-based research on rice production throughout the value chain and related issues under different policies, such as border closure. For example, corruption and smuggling at the border remain a black box. This is crucial for food self-sufficiency after the recent political elections.

Second, problems in the Nigerian rice value chain require problem-anchored solutions, which require further investigation to develop. Technology and research input on the status quo of rice production are needed. Rice farming's evolution in Nigeria provides a case study on the significance of quantity and quality. A preference for foreign rice's flavor and cleanliness causes issues with technology both before and after the rice harvest. Developing methods for maintaining domestic rice quality is the next step, after increasing rice production. It is equally important to train and educate farmers in relation to economic livelihood factors, which must be embedded to promote large-scale mechanization in rural areas while including social factors.

Finally, regarding the global food value chain, it is impossible to neglect the nexus with different actors in the international food trade. Response from trading partners, such as India

and Thailand, regarding Nigeria's protectionist rice policies is worth investigating. Since Nigeria should abide by the regional and global trade terms to which it has acceded, this is about more than avoiding retaliation; it is also about Nigeria's reputation in international diplomatic relations.

Author contributions

XX led the preparation of this manuscript. YG and TZ conceived and drafted the outline of the manuscript. YG obtained and analyzed the data gathered for the project. TZ revised and structured the manuscript. AN coordinated expert interviews and data gathering. All authors contributed to the manuscript's revision and read and approved the submitted version.

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Conflict of interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.

The reviewer WL declared a shared affiliation with the authors at the time of review.

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