



Oyo and Kaduna States Maize Farmers' Perception of Selected Agricultural Policies in Nigeria

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Abstract

This study examined the awareness and perception of agricultural policies by maize farmers in Oyo and Kaduna States of Nigeria. A multistage sampling procedure was used to select 424 respondents: 210 farmers from Oyo and 214 farmers from Kaduna, from whom data were collected using questionnaires administered through a phone poll. Mean, frequency and

inferential statistics such as Chi-square, Spearman Rho, and Pearson Correlation were used to analyse the data. The findings revealed that farmers in Oyo (67.6%) and Kaduna (68.7%) States were aware of the ban on maize importation. Moreover, farmers in Kaduna were more aware (63.1%) of the Growth Enhancement Support Scheme than those in Oyo (48.1%). Most farmers in Oyo and Kaduna States had a favourable perception of the ban on maize importation. Farmers in Kaduna had a better perception of the Anchor Borrowers' Program and Growth Enhancement Support Scheme than their Oyo counterparts. The study recommends that Agricultural policies in Nigeria should be co-created with farmers and decentralised to have holistic and encompassing policies workable nationwide.

Introduction

Access to relevant information by farmers about agricultural policies is a driving force for change and advancement in the agricultural sector (Bonephace et al., 2022). Effective agricultural policies can drive sustainable agricultural production to meet the rising demand for healthy and wholesome food, especially staple food and nutrition security crops (OECD, 2022). Globally, maize is an important staple and food security crop due to its diverse use and high output potential (Grote et al., 2021; Saritha et al., 2020; Erenstein et al., 2022). Global maize production has surged in the past few decades, propelled by rising demand and a combination of technological advances, and the fostering of effective and feasible policies (Erenstein et al., 2022). In Nigeria, maize is an important staple food and nutrition security crop providing over 30% of food calories for human consumption (Akano et al., 2021). The country is the 14th-largest global producer of maize and Africa's second-largest producer after South Africa (Statista, 2022). Nigeria's top ten maize-producing states account for nearly 64% of maize produced in the country. These include Kaduna, Oyo, Borno, Niger, Plateau, Katsina, Gombe, Bauchi, Kogi, and Taraba States (PricewaterhouseCoopers, 2021).

In Nigeria, the government intervenes in the agricultural sector in three significant areas: output markets, input subsidy support, and prices (Amaza et al., 2021). These interventions and the need to achieve food security prompted the government to initiate new agricultural policies, including the Growth Enhancement Support Scheme (GESS), Anchor Borrowers' Programme (ABP), and the ban on the importation of maize and frozen poultry products (CBN, 2021). The ABP was launched to enhance Nigeria's agricultural value chain output and reduce the reliance on food imports (Olanrewaju, 2019). The programme focused on linking agro-processors with smallholder farmers, providing loans at a 9% interest rate and farm inputs such as pesticides, fertilisers, and seedlings (PricewaterhouseCoopers, 2021). If the programme is well implemented, it is expected to assist smallholder farmers in transitioning from subsistence to commercial farming (CBN, 2021).

Moreover, the GESS was implemented to remove the difficulties associated with fertiliser distribution and encourage input suppliers to collaborate with farmers to supply quality and affordable agricultural inputs (Amaza et al., 2021). An electronic wallet channel was operationalised in the scheme to provide a transparent and efficient distribution system for agricultural products (Agwu et al., 2019). This guaranteed that registered farmers with electronic vouchers had access to subsidised seeds, fertilisers, and other agricultural inputs from dealers (Agwu et al., 2019). Also, the ban on the importation of maize and frozen poultry products is a strategy aimed at increasing local production of maize and poultry products and stimulating rapid economic recovery from shocks due to the COVID-19 pandemic. The aforementioned

policies prioritised domestic food and agricultural production through protective trade policies amid low productivity (USDA, 2021).

Agricultural policies in Nigeria have undergone several changes. These changes reflect the transition in government; hence stakeholders, especially smallholder farmers, may not be abreast of agricultural policies put in place to enhance productivity in Nigeria (Joseph et al., 2019; Lokpobiri, 2019). Farmers need to be abreast of agricultural policies to enhance their productivity and compliance with best practices (Agada et al., 2020; Gershon et al., 2020). In fact, agricultural policies should be co-created with the concerned stakeholders, chiefly smallholder farmers. A disconnect between farmers and agricultural policies results in the lack of full participation because the farmers are the primary targets and beneficiaries of these policies. Given the potential embedded in the aforementioned policies instituted by the Nigerian government, there is a need to ascertain farmers' level of awareness and perception about these policies and how they improve access to agricultural credit and enhance productivity. Furthermore, this study examines the constraints encountered and the benefits derived by farmers from agricultural policies. The findings are expected to stimulate consultations among the farmers, government, and stakeholders in the policy corridor on formulating more effective and appropriate policies to enhance sustainable agricultural production and national food security.

Methodology

This study was conducted in Oyo and Kaduna, the leading maize-producing states in Southern and Northern Nigeria (Liverpool-Tasie et al., 2019). Hence, the two states were purposively selected for the study. Oyo State has a population of 9,233,010 (National Population Commission, 2019). Kaduna State has a projected population of 10.4 million in 2023 (Kaduna State Bureau of Statistics, 2022). As a strategic producer of maize in Nigeria, Kaduna State accounts for 24% of the total maize produced in the country (Africa Exchange Commodities Limited, 2020).

The respondents for this study were selected using a multistage sampling procedure. In the first stage, Oyo and Kaduna States were purposively selected because they play a significant role in the nation's maize production and value chain businesses (Liverpool-Tasie et al., 2019). The second stage was to draw samples for the study from a frame of 462 and 481 farmers in Oyo and Kaduna respectively, as obtained from the Agricultural Development Programme (ADP) offices of both states. The third stage was to determine the sample size using the finite sample size calculator¹ shown below.

$$\text{Sample size} = \frac{z^2 \cdot p(1-p)}{e^2} \div \left[1 + \left(\frac{z^2 \cdot p(1-p)}{e^2 N} \right) \right]$$

Where z is the Z-score associated with a confidence level at 95% (1.96), p is the sample proportion and response distribution (50% or 0.5), e is the margin of error (5% or 0.05), and N is the population and sample frame (462 for Oyo and 481 for Kaduna). Thus, 210 maize farmers from Oyo and 214 from Kaduna were sampled for this study.

Structured questionnaires were administered to gather the data for the study. The data collection period was from May 22, 2021, to August 20, 2021. In adherence to preventive measures against the spread of COVID-19, the data were gathered via a phone poll, which involved collecting the respondents' phone numbers from the

¹ <http://www.raosoft.com/samplesize.html>

sources (Kaduna and Oyo States ADPs) that provided the list. Phone calls were then put through to respondents in order to administer the questionnaires. Data were analysed using means, percentage Chi-square, and Pearson Correlation.

Results and Discussion

Farmers' Awareness of Agricultural Policies

Figure 1 shows that the respondents in Oyo (67.6%) and Kaduna (68.7%) States were aware of the ban on maize importation. A large proportion from Oyo (87.6%) and Kaduna (80.4%) States were aware of the Anchor Borrowers' Programme (ABP). In addition, a substantial number of respondents from Oyo (70.0%) and Kaduna (65.0%) were aware of the ban on frozen poultry product importation. This result differs from the findings of Olanrewaju (2019) that most farmers in Kaduna were unaware of the Anchor Borrowers' Programme. However, a little less than half of the respondents (48.1%) in Oyo were aware of the Growth Enhancement Support Scheme (GESS), while those in Kaduna (65.0%) had a better awareness level of the scheme. This result shows that a larger percentage of the respondents in Oyo were less conversant with GESS than their counterparts in Kaduna. This result agrees with Keba (2019), who posited that getting conversant with policies involves a dynamic process in which information gathering, learning, and experience play pivotal roles.

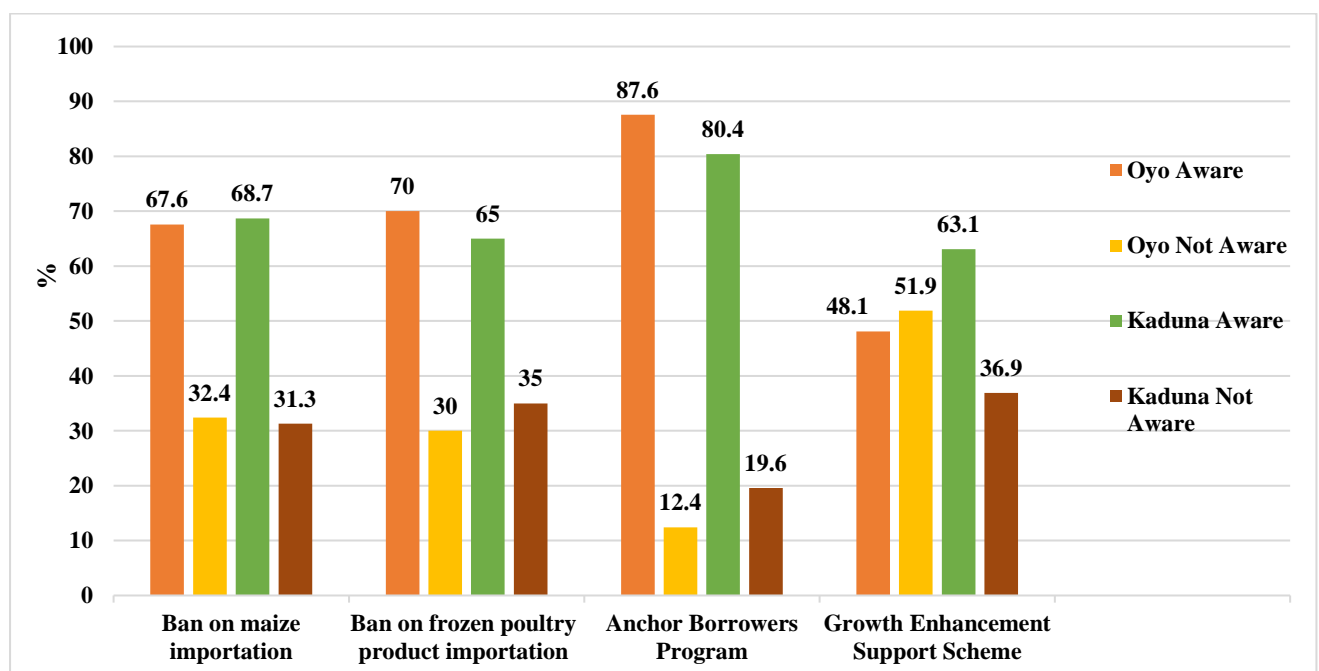


Figure 1: Farmers' awareness of agricultural policies. Source: Field Survey, 2021

Farmers' Perception of Agricultural Policies

Table 1 shows that the majority of the respondents favourably perceived the ban on maize importation. Those in Oyo (61.9%) and Kaduna (71.6%) States admitted that the ban increased the selling price of maize. Farmers in Oyo (61.0%) and Kaduna (74.8%) States also agreed that the ban led to a higher demand for maize. About half of the respondents in Oyo (51.0%) and Kaduna (55.6%) states agreed that the ban increased their income. In addition, the responses from Oyo (58.6%) and Kaduna (62.1%) maize farmers showed that the ban increased the cost of maize seeds. Only 16.2% of farmers in Oyo and 24.3% in Kaduna agreed to the discontinuation of the maize ban to meet domestic demand. Few farmers in Oyo (21.8%) and Kaduna

(19.6%) perceived that the ban on the importation of maize increased the demand for maize. This result negates the hypothesis that the ban on the importation of poultry products will curtail the influx of frozen poultry products and drive the local production and consumption of maize, which is the main poultry feed ingredient.

Although the percentage of farmers who favourably perceived the ABP and GESS policies in both states were low, those in Kaduna still had a higher percentage of farmers with favourable perception towards the policies than those in Oyo. Only 14.8% of farmers in Oyo and 30.8% in Kaduna agreed that the ABP increased access to credit. Farmers in Oyo (16.7%) and Kaduna (44.9%) favourably perceived that the ABP increased levels of production, and 18.1% of farmers in Oyo and 36.9% of farmers in Kaduna perceived there was an easy linkage between farmers and anchor companies. Also, 12.4% of farmers in Oyo and 33.6% of farmers in Kaduna perceived that the ABP led to the elimination of middlemen activities. In addition, 17.6% of farmers in Oyo State and nearly half (49.1%) in Kaduna State perceived that the ABP increased farmers' income. For the GESS, only 11.4% of farmers in Oyo and 32.7% of farmers in Kaduna perceived that GESS increased access to inputs, and 11.0% of farmers in Oyo and 35.0% of farmers in Kaduna perceived that GESS increased farmers' production. Furthermore, only 10% of farmers in Oyo and 28.0% of farmers in Kaduna perceived that the GESS increased farmers' income.

The results bring to the fore the existing gaps in farmers' understanding of agricultural policies. The gaps posit that monitoring and evaluating policy impacts are sacrosanct to improving such policies. Co-creating policies with the intended beneficiaries after a careful (re)definition of problems is imperative for achieving the desired objectives intended by the policies. This result corroborates that of Prasetya et al. (2022), who reported that farmers only had a favourable perception toward agricultural programmes they knew of and benefitted from.

Table 1: Farmers' perception of agricultural policies

Perception statements	Oyo Favourable %	Kaduna Favourable%
Ban on maize importation		
Hike in the cost of maize seeds	58.6	62.1
Increased the selling price of maize	61.9	76.6
Increased maize production	57.6	71.5
Increased demand for maize	61.0	74.8
Increased farmers' income	51.0	55.6
Discontinue maize ban to meet domestic demand	16.2	24.3
Ban on importation of frozen poultry product		
Increased maize demand	21.8	19.6
Anchor Borrowers' Programme		
Access to credit	14.8	30.8
Increased levels of production	16.7	44.9
Easy linkage with anchor companies	18.1	36.9
Removal of middlemen activities	12.4	33.6
Increased farmers' income	17.6	49.1
Growth Enhancement Scheme		
Access to inputs	11.4	32.7
Increased farmers' production	11.0	35.0
Increased farmers' income	10.0	28.0

Source: Field Survey, 2021

Factors Constraining Benefits from the Agricultural Policies

Farmers reported perceived constraints that prevented them from benefitting from the Anchor Borrowers' Programme and Growth Enhancement Support Scheme (Table 2). Most farmers in Oyo reported that the constraints they faced were late disbursement of loans ($\bar{x}=1.86$), difficult requirements of financial institutions ($\bar{x}= 1.86$), climate change ($\bar{x}=1.25$), a breach in agreement by anchor companies ($\bar{x}=1.75$), disagreement between anchor companies and farmers ($\bar{x}=1.67$), and sharp practices among service providers ($\bar{x}=1.75$). Also, farmers in Kaduna opined that climate change ($\bar{x}=1.68$), a breach in agreement by anchor companies ($\bar{x}=1.68$), late disbursement of loans ($\bar{x}=1.62$), and disagreement between the anchor companies and farmers ($\bar{x}=1.39$), were the significant bottlenecks that hampered their participation in ABP. Regarding GESS, lack of counterpart funding by farmers ($\bar{x}=1.13$), mobile network issues ($\bar{x}=1.03$), the substitution of registered names with fictitious names ($\bar{x}=1.0$), sharp practices by helpdesk staff ($\bar{x}=1.00$), and wrong location of input redemption ($\bar{x}=1.00$) were the constraints farmers in Oyo State encountered. However, farmers in Kaduna submitted that the wrong location for input redemption ($\bar{x}=1.54$), mobile network issues ($\bar{x}=1.42$), the substitution of registered names ($\bar{x}=1.41$), lack of counterpart funding ($\bar{x}=1.40$), and sharp practices by helpdesk staff were the constraints to accessing the GESS.

The result suggests that farmers in Kaduna had a better chance of accessing the ABP than those in Oyo. The result also implies that climate change effects and the late disbursement of loans are key challenges that may subject farmers to risks. Increased climate variability, which increases temperatures and dry spells, leads to reduced crop yields. Due to the peculiarities associated with agricultural production, loans disbursed after the farming season led to production risk and poor yields, which reduces farmers' ability to repay. This is in consonance with Tofa et al. (2021), which revealed that climate change could severely impact crop yields and hectarages. The mobile network issues encountered by the farmers could result from poor services by network providers. However, the view of poor mobile network services as a severe constraint by farmers in Kaduna could be due to the disruption of economic activities in the northern part of Nigeria, which is occasioned by the bouts of insecurity and conflicts experienced in the region (Harry & Stanley, 2022).

Perceived constraint from policies	Oyo				Kaduna			
	Severe	Mild	None	Mean±SD	Severe	Mild	None	Mean±SD
	%	%	%		%	%	%	
Anchor Borrowers programme								
Disagreement between the anchor companies and farmers	66.7	33.3	0.0	1.67±0.51	39.3	60.7	0.0	1.39±0.49
Late disbursement of loan	88.9	8.3	2.8	1.86±0.42	62.0	38.0	0.0	1.62±0.49
Climate change, e.g., dry spells during the rainy season	75.0	25.0	0.0	1.75±0.44	67.7	32.3	0.0	1.68±0.47
Difficult requirements of financial institutions	86.2	13.8	0.0	1.86±0.35	26.1	73.9	0.0	1.26±0.45
Sharp practices among service providers	25.0	75.0	0.0	1.25±0.50	20.0	80.0	0.0	1.20±0.41
Breach in agreement by anchor companies	75.0	25.0	0.0	1.75±0.50	68.0	32.0	0.0	1.68±0.48
Growth Enhancement Support Scheme								
Substitution of registered names	28.0	44.0	28.0	1.0±0.76	48.6	43.2	8.1	1.41±0.64
Mobile network issues	29.0	45.2	25.8	1.03±0.75	51.2	39.5	9.3	1.42±0.66
Sharp practices by helpdesk staff	28.6	42.9	28.6	1.00±0.77	18.9	73.0	8.1	1.11±0.52
Lack of counterpart funding by farmers	30.4	52.2	17.4	1.13±0.69	48.6	42.9	8.6	1.40±0.65
Wrong location for the redemption of input	23.5	52.9	23.5	1.00±0.70	68.2	18.2	13.6	1.54±0.74

Table 2: Factors constraining benefits from the agricultural policies

Source: Field survey 2021

Suggestions for Enhancing the Effectiveness of Agricultural Policies

Table 3 shows that the border closure (61.4% and 75.2%) and promotion of local maize production (62.9% and 84.6%) in Oyo and Kaduna States, respectively, will improve the effectiveness of the maize sector in Nigeria. Farmers in both states propose a stronger border closure enforcement to boost poultry production amidst the frozen poultry import ban. In Oyo State, farmers suggest providing irrigation facilities, rural infrastructure, proper monitoring, timely disbursement, and active farmer engagement in policy-making for the Anchor Borrowers' Programme. However, farmers in Kaduna suggested the provision of personnel and institutional framework and the regulations of input prices by the government. The disparity in suggestions among farmers across both states reflects that policies should be decentralised for effective design, adoption and implementation. Where farmers experience a disconnect with policies due to geographical differences, a misrepresentation of the impact of such policies is inevitable.

Table 3: Suggestions for enhancing the effectiveness of agricultural policies

Suggestions	Oyo Yes (%)	Kaduna Yes (%)
Ban on maize importation		
The border should remain closed	92.9	94.9
Promote local production	69.5	92.5
Provide adequate funding for production	88.1	3.7
Border closure should be enforced	61.4	75.2
Promote local production	62.9	84.6
Provide funding	75.2	9.3
The government should prevent smuggling	53.8	5.6
Anchor Borrowers' Programme		
Provide irrigation facilities	97.1	13.1
Provide rural infrastructure	66.7	49.5
Proper programme planning	89.1	48.6
Timely disbursement of loan	94.8	51.4
Provide adequate personnel and institutional framework	58.1	60.7
Training of farmers on climate-smart agriculture	70.0	59.3
Enforcement of input price regulation	94.3	52.3
The scope of ABP should be extended to perennial crops	16.2	34.1
Government should make a soft landing for loan defaulters due to climate change	50.0	10.3
Farmers should be engaged as major stakeholders	81.4	15.0
Participation of agricultural research institutes in the programme administration	86.7	43.0
Growth Enhancement Scheme		
Provide technical support for farmers	76.2	87.4
Provide security for farmers	48.1	52.3

Source: Field Survey 2021

Relationship between the Farmers' Socio-economic Features, Perceived Constraints, and Perception of Agricultural Policies

Table 4 shows a significant negative relationship between the age of farmers and their perception of policies ($r=-0.12$). The coefficients reveal that an increase in farmers' age did not improve their perception of policies. This implies that the younger farmers favourably perceived policies relating to agriculture compared to their ageing counterparts. The result agrees with Jha & Gupta (2021) and Akano et al. (2022), who reported that the age of farmers influences their perceptions of the phenomenon. Also, farmers with larger farm sizes had a more favourable perception of policies than farmers with smaller holdings ($r=0.10$). This result could be due to the penchant for sourcing external financial assistance, technical support, and better market opportunities by farmers cultivating larger farms. Combining family and hired labour appeared to increase farmers' positive outlook toward agricultural policies ($\chi^2=9.205$). The finding of Ren et al. (2019) on the influence of farm size on sustainability issues supports these results.

Furthermore, results on the influence of cropping systems on perceptions toward agricultural policies show that farmers engaged in mixed cropping have better perceptions of agricultural policies ($X^2=0.859$). This is due to the potential increase in diverse needs that can arise from crop mixtures in terms of inputs (land, labour and capital), markets, and technical support. Hence, farmers are better predisposed to policies that can cushion the exigent requirements of practising mixed cropping. Moreover, farmers with access to structured markets appeared to have a better perception of agricultural policies ($X^2=22.847$). Policies such as the ban on maize and the ABP can significantly influence an increase in agricultural productivity; hence, farmers seek to sell their harvests at larger and more dynamic markets compared with individual buyers who purchase their products in smaller bits. Similarly, farmers that added value to their produce by drying before selling policies ($X^2=21.962$) were found to have a better perception of policies than those that sold their maize green. Likewise, farmers who sold more than 10 tons of maize had a better perception of the policies ($r=0.289$). Consequently, our results show that the effectiveness of policy programmes targeted at farmers possesses the impetus to enhance their economic fortunes (Bello et al., 2022).

Moreover, the awareness of agricultural policies positively influenced farmers' perception of the policies ($r=0.313$). Farmers' engagement with agricultural policies and programmes beneficial to their enterprises can significantly enhance a positive view of such policies. This agrees with the findings of Akano et al. (2022), who found that the awareness level of farmers on topical issues can drive their perception of the same. On the other hand, constraints perceived by farmers to hinder them from benefitting from agricultural policies significantly diminished their perception of such policies ($r=-0.262$). Similarly, where the perceived benefits from policies outweigh the constraints, farmers in our study demonstrated that the benefits derived from policies increased their positive views toward such policies ($r=0.443$).

Table 4: Relationship between socio-economic variables, constraints, and perceptions about agricultural policies

Variables	X^2	r
Sex	0.627	
Age		-0.120**
Farm size		0.095**
Farming experience		0.037
Sources of labour	9.205***	
Cropping system	0.859	
Market sources	22.847***	
Sale of maize	21.962***	
Quantity of maize sold		0.289***
Awareness of policies		0.313***
Perceived constraints		-0.262***
Perceived benefits		0.443***

Source: Field Survey, 2021 ***Significant at $p<0.01$, ** $p<0.05$

Conclusion and Recommendations

Most farmers had favourable perceptions about agricultural policies, including the ban on the importation of maize and frozen poultry products and the Anchor Borrowers' Programme. The constraints ranged from the effects of climate change and the late disbursement of loans to stringent requirements from institutions. Overall, ensuring that farmers properly understand agricultural policies designed to enhance their productivity is imperative for achieving sustainable agricultural production and attaining national food and nutrition security in Nigeria.

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