Social and Political Drivers Affecting Wheat Production in Nigeria

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Authors’ contributions
This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

Article Information
DOI: 10.9734/AJAEES/2021/v39i1230824

Open Peer Review History:
This journal follows the Advanced Open Peer Review policy. Identity of the Reviewers, Editor(s) and additional Reviewers, peer review comments, different versions of the manuscript, comments of the editors, etc are available here: https://www.sdiarticle5.com/review-history/82596

Received 18 October 2021
Accepted 21 December 2021
Published 23 December 2021

ABSTRACT

Social and political factors are believed to be affecting agricultural operations in a way that stagnates their growth or leads to the total collapse of the system. A study on social and political factors affecting wheat crop production in Nigeria was conducted with the aim of exploring those factors for proper solutions. Primary data was collected through national stakeholders’ focus group discussion while time series data of the country’s wheat production, harvested area, and imports was collected. MAXQDA statistical software was used to analyze the focus group discussion report, while compound growth rate analysis was used to compare the growth rate of the variables under study. The results indicated the extent to which political factors affect wheat production in Nigeria more than others. The degree to which external social factors affect the sector was less when compared with political factors and more than internal social factors. Non-adoption of recommended agronomic practices and the knowledge level of the farmers were the major internal social factors. While the major external social factors were consumer food habits, consumer demand for convenience, low produce prices, and high input costs. Political factors identified were social security issues, inconsistent government policies, and intricacies in implementation, the role of the publication media, role playing by the milling industries, international trade interests, and lack of political will. The result also indicated that the total average growth rate of production was

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negative, and positive growth was recorded in the harvested area, with a high percentage recorded in imports. For Nigeria to achieve the desired outcome, focused commitments and the adoption of a multi-dimensional approach are required.

Keywords: Social factors; political factors; wheat; production.

1. INTRODUCTION

Agricultural systems operate in social and political situations that have a significant impact on how they function. It is vital to understand how social and political variables influence agricultural systems if they are to be sustainable [1]. Outside the official political domain, political risks to agriculture can emerge. Wheat farming has been the most difficult area of Nigerian agriculture for decades due to high temperatures that are unfavorable to the crop, low production, and a variety of other factors [2]. Nigeria produced 55 thousand tons of wheat in 2020. Nigerian wheat production increased at an average annual rate of 11.83 percent from 7 thousand tons in 1971 to 55 thousand tons in 2020 [3]. Wheat has become the highest single imported commodity in Nigeria for the past 10 years [4]. The government initiated policies aiming to covert wheat production from its status to the desired status. Some of these were the Accelerated Wheat Production Program (1986), the Agricultural Transformation Agenda (2010), the Anchor Borrower Program (2015), and the Agricultural Promotion Policy (2016). Despite these initiatives, the gap between production and demand still exists and keeps widening year by year, which shows that wheat production sufficiency may become merely a dream.

Given the foregoing, the goal of this research is to investigate the social and political factors influencing production in a way that has slowed its growth.

2. MATERIALS AND METHODS

2.1 Study Area

Nigeria shares a border with Benin, Niger, Chad, and Cameroon in West Africa. It is bordered on the south by the Gulf of Guinea, which is part of the Atlantic Ocean. From semi-deserts in the north to tropical rainforests in the south, Nigeria has a diverse range of natural environments. Most parts of the country have different climatic conditions. Arid climatic conditions prevail in the north, while an equatorial climate prevails in the south. It is a federal republic with 36 states and the Federal Capital Territory as its constituents. Nigeria is Africa’s most populous country and the world’s seventh most populous, with an estimated 206 million people as of late 2019 [5].
2.2 Selection of the Participants

Three steps were involved in the selection process of stakeholders. First step: selection of relevant institutions. The institutions were relevant government institutions and agencies, NGOs, the millers’ association of Nigeria, the wheat farmers’ association of Nigeria and a private consultant firm. The second step was to serve notification to the selected institutions. Third step: a focus group discussion session was conducted and all the relevant stakeholders fully participated and interacted.

2.3 Data Collection

The data was collected through primary and secondary sources. The primary data was collected through a national stakeholder focus group discussion (FGD). After consultation with an expert, eleven points were developed to guide the discussion. The report was drafted and later identified the factor following the [1] classification. For secondary data, time series data was collected from 1986 to 2020 with respect to the variables viz; wheat production, harvested area, and imports.

2.4 Statistical Tools

The report of FGD was analyzed using MAXQDA 2022 statistical software to find out the vastness of the factors with regard to the situation. Secondary data was divided into 5 groups according to the administration regime (1986 – 1990, 1991 – 1999, 2000 – 2009, 2010 – 2015, and 2016 – 2020). A compound growth rate analysis was done to compare the rate of growth during each period.

3. RESULTS AND DISCUSSION

Social and political factors are believed to be affecting agricultural operations in a way that slowed their growth or leads to the total collapse of the system. The wheat crop is one which is largely affected by such action in Nigeria’s agriculture. The present study tried to explore those factors for a possible solution.

Fig. 1 shows that one or more political factors and social external factors were identified by every participant during the session. Internal social factors were also playing a significant role. The results indicated the extent to which political factors affect wheat production in Nigeria more than others. The degree to which external social factors affected the sector was lower when compared with political factors and higher than internal social factors.

Table 1 shows that lack of good cultivation conditions, the knowledge level of the farmer, the adoption of recommended agronomic practices, and low yields of the crop are the most common internal social factors affecting the farmer's production. Consumer food habits, consumer demand for convenience, rapid population growth, less price of the product, high cost of input, lack of adequate extension personnel, low yield of the crop, and lack of availability of certified seed are major external social factors affecting the sector. While social security issues, the role of the media, inconsistent government policies, intricacies in policy implementation, role-playing by the milling industries, international trade interest, lack of political will, lack of irrigation infrastructure, persistence of corruption, lack of wheat value chain policy, and insufficient funding are the major political factors stagnating growth in the wheat farming sector.

3.1 Internal Social Factor

Internal social factors are those that arise on the farm and have an impact on the farmer's decision-making. The stakeholders agreed that the poor yield was a consequence of the non-adoption of proper recommended practices by the farmers. This correlated with the findings of [5,7] both of which attributed wheat production in Nigeria is being hampered by a lack of modern agronomic practices. Now, there is "hope" as the millers are trying everything possible to help Nigeria achieve wheat self-sufficiency by eliminating bunches of middlemen that benefit from the sweat of the farmer through the establishment of 15 wheat aggregation centers in Ajingi, Danbatta, Kura, Garin Malam, Bagwai, Ringin, Taura Birmin Kudu, Kafin Hausa, Malam Madori, Arugungu, Augi, Gunza, Jega, and Birnin Kebbi. The major challenges facing certified seed availability are the lack of adequate seed companies that have the mandate to multiply breeder and foundation seeds and make them available to farmers for all time. This is consistent with the findings of [7,8–10], which found that wheat farmers in Nigeria experienced low yields due to a lack of improved varieties.
3.2 External Social Factors

External social factors are those originating from outside the farm, which could be managed within the micro-social system. Food habits were one of the factors, because elites were avoiding Nigerian wheat due to its high gluten content and others were running away from it due to the perceived difficulties in processing it for consumption at household level. Since 1990, when AWPP was aborted, the wheat crop has been left with no policy as it was not considered vital like other crops due to foreign influence. According to [11], a good example is the late 1960s ‘eat wheat’ campaign in South Korea, which was led by private and public US interests working together. Such forces have also been active in Nigeria.

3.3 Political Factors

Political factors are the factors that are of greater social concern and are beyond our control at the micro-social level. The role of the media in the publication was highlighted. The media were blamed for making and duplicating false publications that did not represent the actual Nigeria’s wheat situation. The stakeholders disputed the statement credited to [4,12–17], which said Nigeria’s farmers produce an average of 1 ton of wheat per hectare, which clearly termed it a political attempt to show the inability of Nigeria to achieve wheat self-sufficiency. They rightly pointed out that Nigeria’s farmers produce an average of 2.5–3MT per hectare with the use of the available certified seeds such as Atilla Gan Atilla and the use of the seeds developed by the Lake Chad Research Institute (LACRI). Climate change is termed as a major threat to wheat production in Nigeria due to the shortening of the Harmattan period during which wheat is grown and the high cost of inputs, among other constraints. It is consistent with the findings of [2,10,18], all of which attribute low yields to harsh weather conditions. Limited land area is one of the factors identified, where the discussion pointed out that Nigeria has over a million hectares that can be put under wheat cultivation. According to [19,20], only 85,000 hectares are being put under productive use despite land availability for the same purpose. Social security issues were one of the factors identified. Similar findings were reported by [21–23] wheat farmers in Nigeria abandoned their farms due to Boko Haram insurgent attacks, and there has been no significant improvement as of yet [7]. Predicted a
Decrease in a wheat farming area of 5,000 hectares due to an increase in banditry and kidnapping activities in Northwest Nigeria. International trade interest was cited as one of the factors. It is reported that the accelerated wheat production programme (AWPP) failed as a result of pressure from wheat-interested nations. According to [20], American interests are consistently working against wheat production advances in Nigeria. Lack of cohesion in the national strategy in wheat development was clearly seen where government officials pegged $400/MT as the fixed price of wheat grain without involvement of the stakeholders. This supported the findings of [24,25] that most policies in Nigeria were implemented without the involvement of stakeholders and experts.

The role played by milling industries According to [11], "there is a close link between the international wheat-trading interests and the companies with a stake in the Nigerian milling industry." Further findings revealed that the failure of AWPP was attributed to the millers who reluctantly ignored locally produced wheat [9]. According to [2], wheat millers haven't been willing to comply with 10 per cent to 40 per cent of the future cassava flour inclusion policy. [15], reported that, flour millers also favour imports, citing references of higher protein and gluten content accompanied by low moisture content. This false myth that millers held as an excuse for decades has been overcome since 2014 by LACRI. The discussion pointed out that the farmers' refusal to sell to the millers was sometimes a result of poor yields, which were below the farmer's expectations.

Table 2 shows the list of certified seeds developed by the Lake Chad research Institute (LACRI) in an attempt to overcome the millers' claim. The findings disputed [14] and [2], respectively, that claimed the variety of wheat in Nigeria is called "Hard wheat" (Triticum durum). All the available varieties in Nigeria before now (December 2021) were soft wheat (Triticum aestivum). Two durum wheat varieties were released recently by LACRI and will be made available for usage by farmers.

Fig. 2 shows there was an existing relationship among the identified factors. This means some factors could be categorized as internal social factors as well as external social factors, and they could also be political factors.

Table 1. Social and political factors identified

<table>
<thead>
<tr>
<th>Internal social factors</th>
<th>External social factors</th>
<th>Political factors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lack of good cultivation condition</td>
<td>Consumer food habits</td>
<td>Social security issues</td>
</tr>
<tr>
<td>Knowledge level of the farmers</td>
<td>Consumer demand for convenience</td>
<td>Role of media in publication</td>
</tr>
<tr>
<td>Non-adoption of the recommended agronomic practices</td>
<td>Less price of the produce</td>
<td>Inconsistent government policies</td>
</tr>
<tr>
<td>Low yield of the crop</td>
<td>High cost of input.</td>
<td>Intricacies in policy implementation</td>
</tr>
<tr>
<td></td>
<td>Lack of adequate extension personnel</td>
<td>Role playing by the milling industries</td>
</tr>
<tr>
<td></td>
<td>Low yield of the crop</td>
<td>International trade interest</td>
</tr>
<tr>
<td></td>
<td>Lack of availability of certified seed</td>
<td>Lack of political will</td>
</tr>
<tr>
<td></td>
<td>Rapid population growth</td>
<td>Limited land area</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of irrigation infrastructure</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Persistence of corruption</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of wheat value chain policy.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Insufficient funding</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Lack of cohesion among the national strategy in wheat development.</td>
</tr>
</tbody>
</table>
Table 2. List of varieties developed by Lake Chad research institute

<table>
<thead>
<tr>
<th>S/n</th>
<th>Variety name</th>
<th>Old variety name</th>
<th>Potential yield</th>
<th>Released year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LACRIWHIT – 5</td>
<td>Norman</td>
<td>5 to 6</td>
<td>2014</td>
</tr>
<tr>
<td>2</td>
<td>LACRIWHIT – 6</td>
<td>Reyna 28</td>
<td>5 to 5.5</td>
<td>2014</td>
</tr>
<tr>
<td>3</td>
<td>LACRIWHIT – 9</td>
<td>Pastor</td>
<td>6 to 7</td>
<td>2016</td>
</tr>
<tr>
<td>4</td>
<td>LACRIWHIT - 10</td>
<td>Kauz</td>
<td>6.5 to 7.5</td>
<td>2016</td>
</tr>
<tr>
<td>5</td>
<td>LACRIWHIT - 11</td>
<td>Imam</td>
<td>6 to 7</td>
<td>2019</td>
</tr>
<tr>
<td>6</td>
<td>LACRIWHIT – 12D</td>
<td>MBA-MAJA (Durum)</td>
<td>6.2</td>
<td>December 2021</td>
</tr>
<tr>
<td>7</td>
<td>LACRIWHIT – 13D</td>
<td>ALTAR-84 (Durum)</td>
<td>5.6</td>
<td>December 2021</td>
</tr>
</tbody>
</table>

Fig. 2 Code relationship

3.4 Various Administration Regime Commitments to Wheat Production in Nigeria from 1986 to 2020

Table 3. Nigeria’s administration regime

<table>
<thead>
<tr>
<th>S/n</th>
<th>Administration</th>
<th>Regime</th>
<th>Wheat related Policy</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Military Head of state</td>
<td>1986 – 1993</td>
<td>Accelerated wheat production programme AWPP (SAP era)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>there was no significant agricultural policy initiated</td>
</tr>
<tr>
<td>2</td>
<td>Military head of state</td>
<td>1993 – 1998</td>
<td>No policy enacted</td>
</tr>
<tr>
<td>4</td>
<td>Civilian administration</td>
<td>1999 – 2007</td>
<td>Agricultural transformation agenda</td>
</tr>
<tr>
<td>5</td>
<td>Civilian administration</td>
<td>2007 – 2015</td>
<td>Anchor borrower program, and Agricultural Promotion Policy</td>
</tr>
<tr>
<td>6</td>
<td>Civilian administration</td>
<td>2015 – 2021</td>
<td></td>
</tr>
</tbody>
</table>

3.5 Impact of Each Regime on Wheat Production


Fig. 3 demonstrates that Nigeria imported 1 MMT of wheat and produced 67000MT in 1986. AWPP Initiated in the same year where wheat importation was banned outright, the selected farmers were supplied with necessary inputs and wheat production rose to 72000MT in 1987, and instantly the production went down despite working policy from 1988 to 1990. Consequently, wheat imports lost up to 80% in 1987 when compared with 1986, and continued to rise slowly despite the ban. Furthermore, the area under wheat cultivation moved up in 1987 and down in 1988. In 1990, the area under wheat crop production reached a 76.19% increase compared with the land area in 1989.

- Pre wheat policy era (under military head of states) 1991 – 1999.

Evident from (Fig. 4) It could be seen that, there was no reasonable volume of production recorded during the period as the average production stood at 30,688MT, while importations continued to record success as they kept increasing year by year, although there was mere sway in the importation sector. During this era, there were no significant increases in both production and land area under wheat cultivation.
Fig. 3. Nigeria’s wheat production, harvested area, and import within AWPP period
*Source: Production, Supply and Distribution of Agricultural Commodities by Market Year, 25 May 2021*

- Pre wheat policy era (under civilian administrations) 2000 – 2009.

It could be seen from Fig. 5 that, wheat importers were having a field day to maintain the wheat trap idea, while local production was still suffering.


ATA played a significant role in the agricultural sector in Nigeria. In 2010, wheat production increased from 48000MT in 2009 to 74399MT in 2010. Nigeria produced 165,000MT of wheat in 2011. Till date, no production has been officially recorded that tallies 2011 production. This is described as a success recorded under the ATA. The wheat transformation agenda was initiated as a scheme toward achieving the stated objectives.


Fig. 7 shows that wheat importation continued to grow at a rapid pace as demand increased due to population growth, while actors swayed local
wheat production in their favor. Under APP, an anchor borrower scheme was initiated to facilitate the achievement of specific crops, and wheat farmers were included in 2020.

3.6 Compound Growth Rate Analysis

The average growth rate results for five periods are shown in Table 3. The results show that there was a negative growth rate in all three variables under study from 1986–1990, with values of -18%, -19%, and -3% for production, harvested area, and imports, respectively. Positive growth rates were recorded from 1991–1999, where production increased by 27%, harvested area increased by 31%, and imports increased by 21%. From 2000 to 2009, production and harvested area growth rates were...
negative at 7% and 5%, respectively, while imports increased by 8%. From 2010–2015, all the variables recorded positive increases of 8%, 15%, and 2% for production, harvested area, and imports, respectively. From 2016 – 2020, production growth rate was negative (-2%), while the harvested area growth rate remained unchanged and the import growth rate recorded a 2% increase. This implies that the highest growth rate of the variables was recorded under the military administration during the pre-wheat policy period. The aims of each policy were to increase wheat production and discourage wheat imports. These results show that the policies failed to achieve the desired results.

Table 4 shows the overall growth rate of production, harvested area, and imports. This indicated that the total average growth rate of production was negative (-1%) and less positive (2%) growth rate was recorded in the harvested area, while (5%) positive growth was recorded in imports. Where the production growth rate was negative and the harvested area growth rate was positive, it was a clear indication of the low yield of the wheat crop in Nigeria.

Table 4. Compound growth rate

<table>
<thead>
<tr>
<th>Regime</th>
<th>Period</th>
<th>Production</th>
<th>Harvested area</th>
<th>Import</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accelerated wheat production program</td>
<td>1986 – 1990</td>
<td>-0.18</td>
<td>-0.19</td>
<td>-0.03</td>
</tr>
<tr>
<td>Military administration pre wheat policy period</td>
<td>1991 – 1999</td>
<td>0.27</td>
<td>0.31</td>
<td>0.21</td>
</tr>
<tr>
<td>Civilian administration pre wheat policy period</td>
<td>2000 – 2009</td>
<td>-0.07</td>
<td>-0.05</td>
<td>0.08</td>
</tr>
<tr>
<td>Agricultural Transformation Agenda period</td>
<td>2010 – 2015</td>
<td>0.08</td>
<td>0.15</td>
<td>0.02</td>
</tr>
<tr>
<td>Agricultural Promotion Policy period</td>
<td>2016 – 2020</td>
<td>-0.02</td>
<td>0.00</td>
<td>0.02</td>
</tr>
</tbody>
</table>

Table 5. Overall growth rates for 35 years

<table>
<thead>
<tr>
<th>S/n</th>
<th>Period</th>
<th>Production</th>
<th>Harvested area</th>
<th>Imports</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>1986 – 2020</td>
<td>-0.01</td>
<td>0.02</td>
<td>0.05</td>
</tr>
</tbody>
</table>

Fig. 7. Nigeria’s wheat production, harvested area, and import APP period
Source: Knoem.com Production, Supply and Distribution of Agricultural Commodities by Market Year, 25 May 2021
4. CONCLUSION

The social and political factors affecting wheat production were identified as internal social factors, external social factors, and political factors. Lack of good cultivation practices and the knowledge level of the farmers were the major internal social factors. These, among others, prevented the farmer from fully adopting the recommended agronomic practices. While the major external social factors were consumer food habits, consumer demand for convenience, less produce prices, and high input costs. Political factors identified were social security issues, inconsistent government policies and intricacies in implementation, the role of media in publication, role playing by the milling industries, international trade interests, and lack of political will. No doubt wheat millers imported more than required in 1986. It may have been a means for them to sabotage AWPP’s success. The present approach employed by the milling industry if continue will surely boost the wheat crop production in the country. Further findings indicated that the total average growth rate of production was negative (-1%) and less positive (2%) growth rate was recorded in the harvested area, while (5%) positive growth was recorded in imports. It was a clear indication of the low yield of the wheat crop in Nigeria. For Nigeria to achieve the desired outcome, focused commitments and the adoption of a multi-dimensional approach are required. Political factors were the major concerns surrounding the wheat production sector and would be overcome through a yearly stakeholders’ round table meeting to review the situation. External social factor issues would be addressed by raising awareness and establishing a commodity board to ensure remunerative prices for farmers and reasonable prices for consumers, as well as a consistent supply of raw materials to milling industries. Extension should be intensified to enhance the knowledge level of the farmer for better understanding and increased adoption of new varieties. This could help to overcome internal social issues.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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