



# Positioning Nigeria as Africa's leader in maize production for AfCFTA



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## Executive summary

01

# Executive summary

Maize is one of the most widely planted cereals in the world. Global production of maize has averaged >1,000 million metric tonnes (MMT) over the past decades. With total production of 11 MMT, Nigeria is arguably Africa's second largest producer of maize after South Africa. Ethiopia occupied the third-place position on the chart of largest producers of maize in Africa. Together, the three countries (i.e., South Africa, Nigeria and Ethiopia) accounted for about 39% of the continent's total maize output in 2019. In Nigeria, the top ten maize producing states (Borno, Niger, Plateau, Katsina, Gombe, Bauchi, Kogi, Kaduna, Oyo and Taraba) accounts for nearly two-third (64%) of maize produced in the country.

About 45.5% of maize produced in Nigeria are used to manufacture animal feeds (e.g., poultry feeds) and nearly 98% of all animal feeds produced in Nigeria are used by poultry farmers. Maize accounts for 60 – 65% of poultry feeds constituents. Meanwhile, 6.5% of maize produced in Nigeria is used by brewing companies while 13% is used for the manufacturing of industrial flours, corn flakes and other confectionaries. The share of household consumption of maize however stands at 10-15%.

While Nigeria is the second largest maize producer in Africa, the country's export capacity for the agricultural product is abysmally low when compared to peers like South Africa which account for nearly two-third of maize export in the continent. The relatively low maize export in Nigeria is primarily due to

several factors including poor maize yield and existence of an official ban on export.

Maize yield in Nigeria stands at less than two tonnes per hectare (t/ha) relative to 4.9 t/ha and 4.2 t/ha in South Africa and Ethiopia respectively. This is due to continued usage of open pollinated variety (OPV) rather than improved hybrid seeds by the country's maize farmers. As a result, production is low and could barely satisfy the huge maize demand estimated at 12 – 15 MMT thereby creating a maize supply gap of nearly 4 MMT per annum. The supply gap necessitated the promulgation of the export ban on maize.

The current maize production level in Nigeria, as well as the near zero export of the produce from the country, puts Nigeria in an unfavourable position to compete in the implementation of the Africa Continental Free Trade Area (AfCFTA). It is critical that the country adopts policies that would address challenges faced by maize farmers and put structures in place to explore and optimize the opportunities presented by AfCFTA. Some of these initiatives could include review of tariff and non-tariff barriers on maize, promote the use of high-yield, disease-resistant maize seed varieties, support agricultural research and development, encourage aggregation and backward/forward integration, scale the power of commodity exchanges such as AFEX and NCX, strengthen value linkages for maize-based products, promote agricultural mechanization among others.





# Global maize production and consumption

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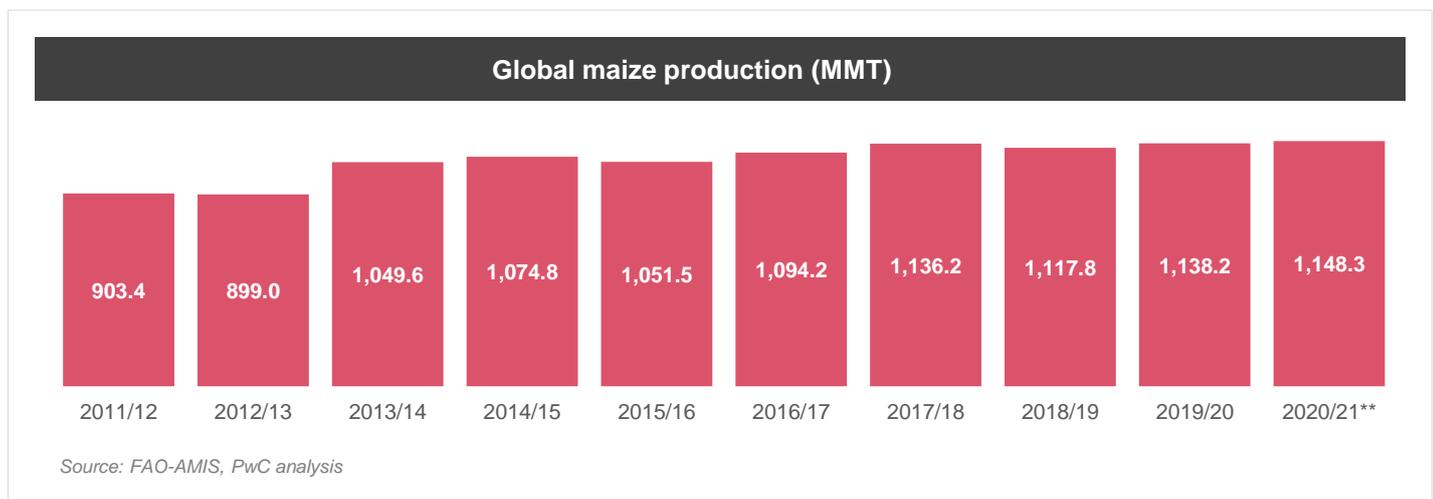
# Global maize production and consumption

Maize is important to the international food market. It is the most widely planted cereals crop and accounts for more than half of total grains produced worldwide. The crop is broadly classified into two: yellow maize and white maize. While yellow maize is by far the most popular variety of maize in the global market because of its use for animal feeds and ethanol production, white maize on the other hand is grown predominantly in Sub-Saharan Africa, Latin America and South Asia and is more commonly consumed as food.

Global maize production has remained relatively flat since 2013/2014 marketing year. However, nearly 1,140 million

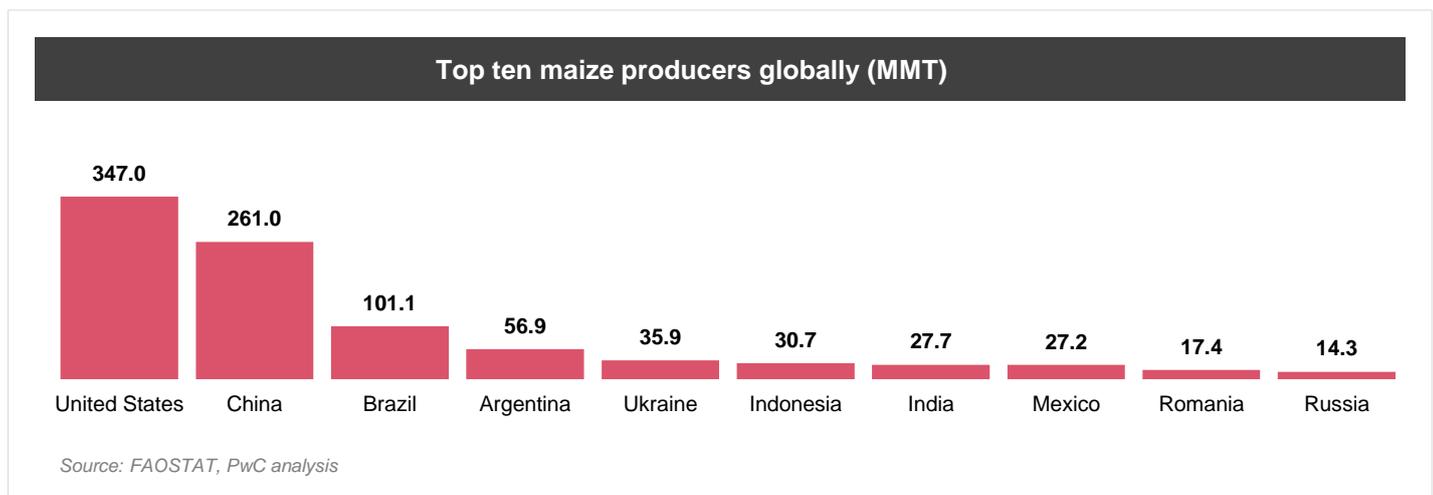
metric tonnes (MMT) of maize were harvested from about 190 million hectares in 2019/2020. The increase is attributed to rapid production expansion in Asia.

Global maize production is however projected to rise slightly to 1,148 MMT by the end of the 2020/2021 marketing year according to data from the Agricultural Market Information System (AMIS). This is slightly higher than the forecast by the International Grain Council (IGC) of January 2021 which slashed global maize production by about 15 MMT to 1,133 MMT due to weak maize production outlooks in the United States, Ukraine and European Union.<sup>1</sup>



The bulk of the world's maize production is concentrated in the United States of America, China and Brazil. Together, these three countries accounts for about 62% of global maize production in 2019. Ukraine tops Europe as the largest maize producer in the continent. The European Union (EU) as a group

contributes substantially to global maize production and exerts significant influence in the international maize market. According to data from Statista, maize production in the EU as at 2019 stood at over 66 MMT, roughly about 5.8% of global output.

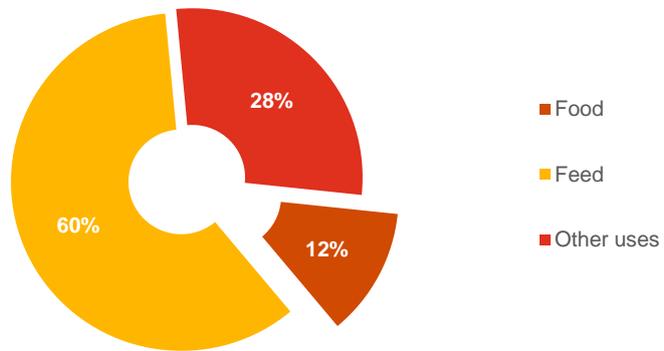


Maize is predominantly used as food, animal feeds and for industrial purposes such as in the production of maize-based ethanol and starch etc. About 60% of maize is used for animal feeds while 12% is used domestically as food. Maize

consumption declined in 2020 following the outbreak of COVID-19. Nevertheless, with global economic recovery, maize consumption is expected to rise worldwide on the back of increased demand for livestock feeds.

1. [https://www.igc.int/en/gmr\\_summary.aspx](https://www.igc.int/en/gmr_summary.aspx)

### Maize consumption per use cases



Source: FAO-AMIS, PwC analysis



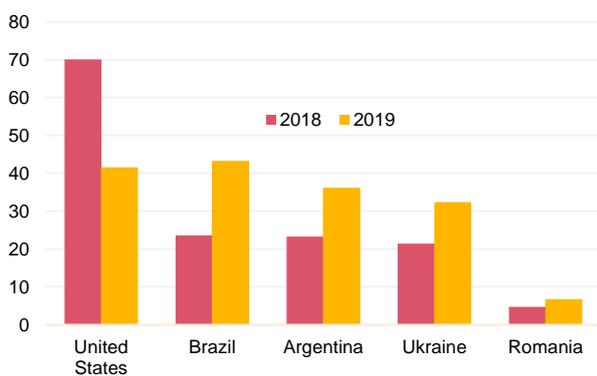
# World's largest exporters and importers of maize

Over 186 MMT of maize were exported globally in 2019 compared to 159.8 MMT exported in 2018. The United States is by far the largest exporter of maize in the world but was overtaken by its rival Brazil in 2019 when the South American country exported nearly 43.3 MMT of maize that year. The United States, Brazil, and Argentina accounts for more than half

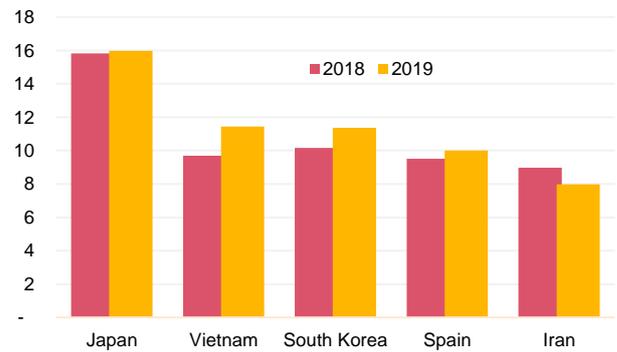
of global maize export with the bulk of the export flowing into large markets in Asia and Europe.

Meanwhile, the Asian market is the largest importer of maize globally. Leading Asian market for global maize exports includes Japan, Vietnam, South Korea, and Iran.

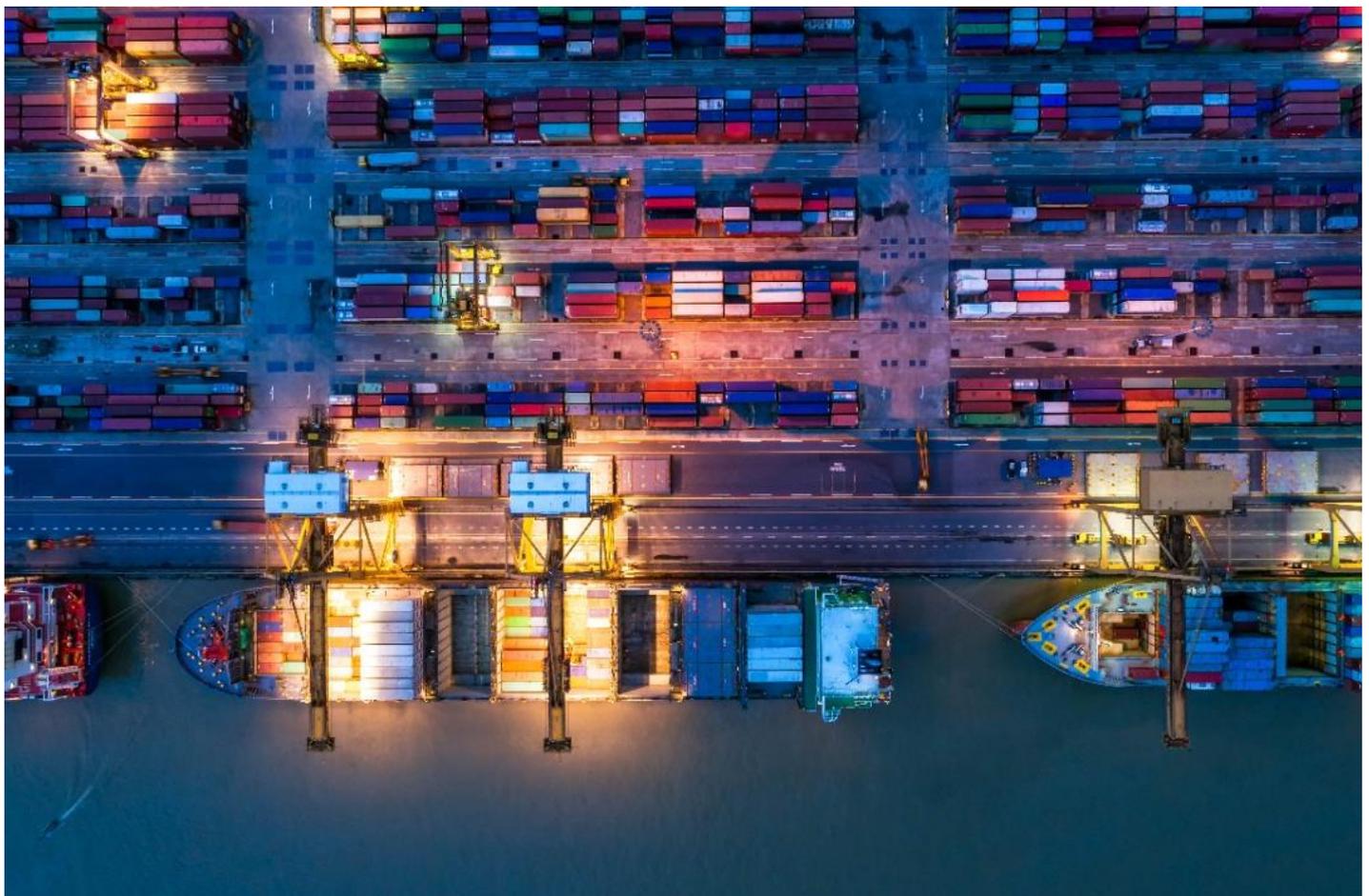
**Top five maize exporting countries (MMT)**



**Top five maize importing countries (MMT)**



Source: ITC Trade Map, PwC analysis





# Maize production in Africa

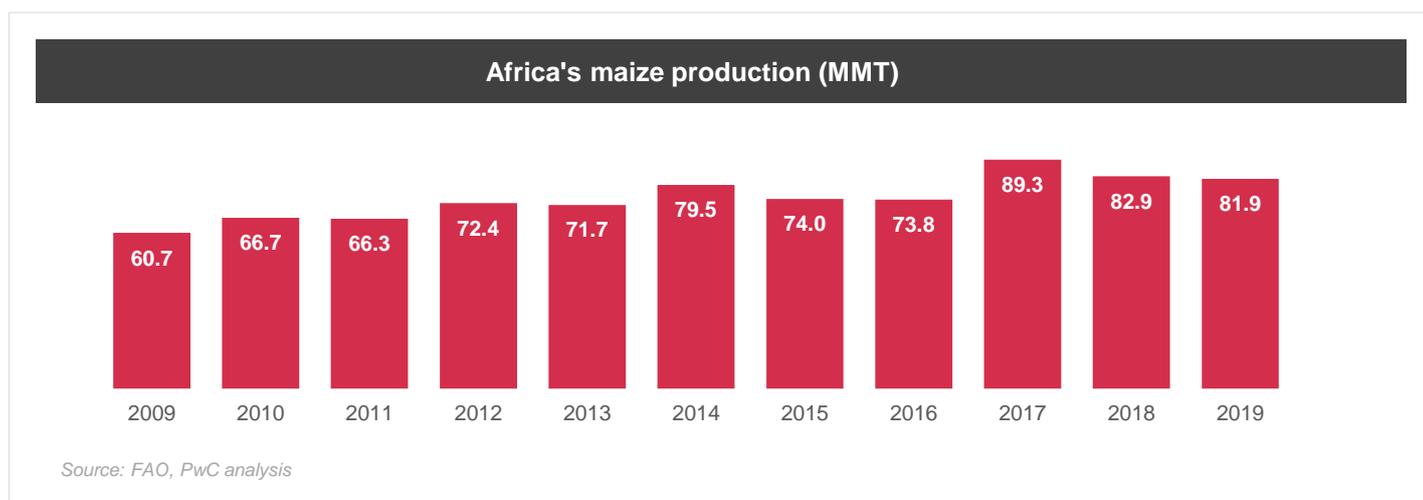
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# Maize production in Africa

Maize is consumed by about half of the population of Sub-Saharan Africa. Generally, Africa accounts for about 7% of global maize production.

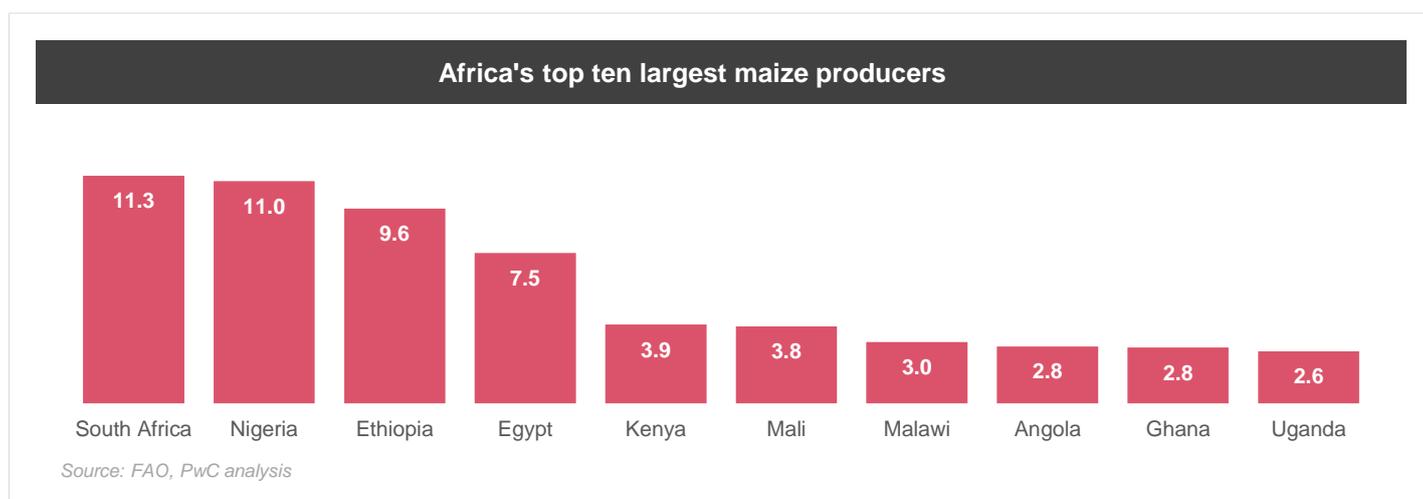
In 2019, the continent's maize production stood at roughly 81.9 MMT which is lower than 89.3 MMT recorded in 2017. This is because growth in Africa's maize production is mainly driven by increase in harvested area as against increase in yield, which

remained the same at about 2 tonnes per hectare (t/ha) over the past decade. A comparison of Africa's maize yield with other regions such as North America (10.5 t/ha), Europe (7.2 t/ha) Asia (5.5 t/ha) and South America (6.1 t/ha) reveals the need for African governments to support African farmers with the necessary tools that will enhance their productivity like their peers in the other regions highlighted.



Maize production differs substantially across Africa's sub-regions. East Africa is the hub of maize farming in the continent with an average annual production of 30 MMT which represent more than a third (37.6%) of Africa's aggregate production. East Africa is followed by West Africa and Southern Africa with average annual production of 19 MMT and 12 MMT respectively.

South Africa, Nigeria and Ethiopia are the largest maize producing countries in Africa, with a combined production of nearly 32 MMT in 2019, which represents 39% of Africa's maize production in that year.



# Africa's maize export

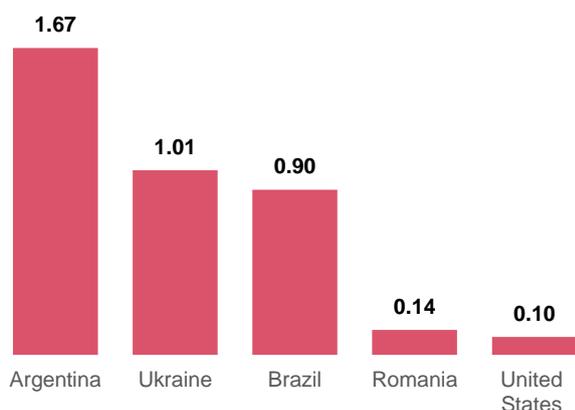
Africa exported about 1.8 MMT of maize valued at US\$464.9 million in 2019. South Africa remains the continent's largest maize exporter accounting for about two-third of total exports. The bulk of South Africa's maize export are shipped to neighbouring countries like Zimbabwe, Namibia, Botswana, Zambia, Mozambique, Eswatini etc. Other notable exporters of maize in Africa includes Tanzania and Uganda.

On the other hand, Africa imported about 12.5 MMT of maize valued at over US\$4 billion in 2019. This is as a result of the need to meet the continent's growing maize demand for human

consumption, industrial processing and manufacturing. In the light of the continent's rapidly growing population, it is likely that Africa's maize import will continue to be on the increase.

North Africa countries such as Algeria, Morocco and Tunisia are the largest importers of maize in Africa. The major suppliers of maize into Africa countries includes Argentina, Ukraine, Brazil, Romania and the United States amongst others.

**Africa's top five maize suppliers (MMT), 2019**



Source: ITC, PwC analysis

**Africa's largest maize importers and their major partners**

Importing countries	Quantity imported in 2019 (MT)	Major suppliers
Algeria	5,303,606	Argentina, Brazil, Paraguay, Ukraine and the United States
Morocco	2,731,203	Argentina, Brazil, Ukraine, the United States and France.
Tunisia	1,025,880	Ukraine, Argentina, Romania, Brazil and Serbia
Libya	618,289	Ukraine, Romania, Russia, Bulgaria and Argentina
South Africa	591,546	Argentina, Chile and the United States

It is important to note that the import values of maize by Africa countries is exclusive of the values of maize bye-products. Africa countries still imports nearly US\$125 million and US\$82 million worth of corn meal and corn starch respectively.

The introduction of Africa Continental Free Trade Area (AfCFTA) presents huge opportunities for Africa countries to boost maize production and reduce importation of maize and its bye-products from America and Europe.



# Assessment of maize production in Nigeria

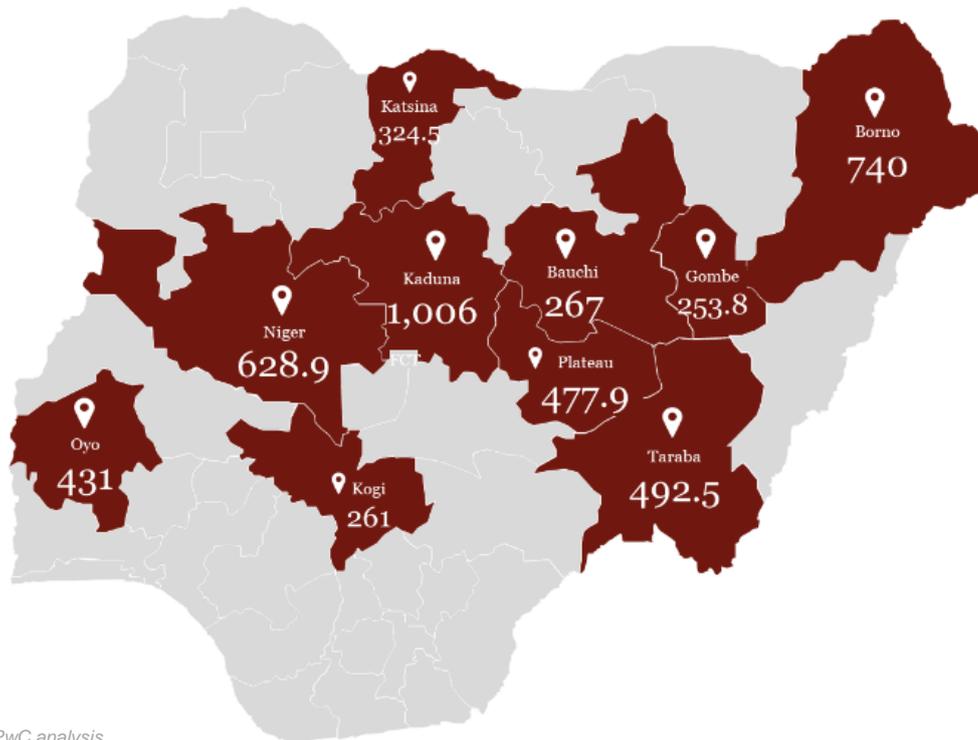
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# Assessment of maize production in Nigeria

Maize is one of the most planted crops in Nigeria and it accounts for the largest share of the country's coarse grain production. Maize farming is carried out in nearly all the geographical zones in Nigeria. However, the bulk of the

country's maize production is concentrated in Borno, Niger, Plateau, Katsina, Gombe, Bauchi, Kogi, Kaduna, Oyo and Taraba states. These top ten maize producing states accounts for nearly two-third (64%) of maize produced in Nigeria.

Map of Nigeria showing the top ten maize producing states (000' metric tonnes)

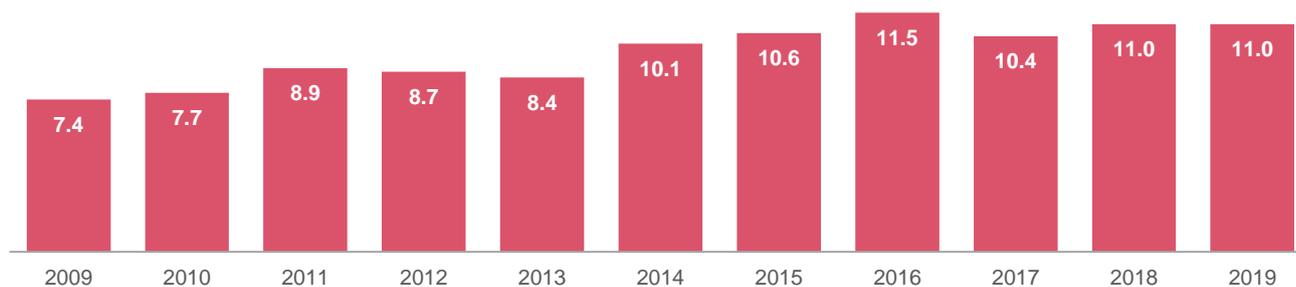


Source: NBS, PwC analysis

Nigeria is Africa's second largest maize producer after South Africa and the 14<sup>th</sup> largest producer globally. Data from FAO put Nigeria's total maize production in 2019 at about 11 MMT harvested from over 6.8 million hectares of land.

This production level represents a growth rate of 49% relative to the production level recorded a decade earlier. However, the association of maize farmers in Nigeria gave a far higher production figure of 20 MMT in 2019.<sup>2</sup>

Nigeria's maize production output (MMT)



Source: FAO, PwC analysis

2. <https://www.commodity-port.com/nigerian-farmers-reduce-maize-production-target-due-to-covid-19-insecurity/>

Nevertheless, Nigeria's maize yield has remained relatively constant at about 1.7 t/ha since 2017. This is low compared to South Africa and Ethiopia's yield of 4.9 t/ha and 4.2 t/ha respectively. The reason for this is due to farmers' reluctance to transit from the use of open pollinated variety (OPV) to improved hybrid seeds as well as the high cost of these improved maize seed varieties etc. According to International Institute of Agriculture (IITA) estimates, less than 10% of Nigeria farmers uses the hybrid maize variety, which gives higher yields than the OPV largely used by farmers. The challenge of poor yield which leads to reduced maize output is exacerbated by post-harvest losses which is estimated to be about 20–30% of total maize production. Programmes such as the CBN's Anchor Borrower's Programme and IITA's Business Incubation Programme (BIP) have since evolved to resolve the challenges of low yield/poor output.

Meanwhile, Nigeria's annual maize demand for human consumption and animal feed production ranges from 12–15 MMT. This puts Nigeria's maize production versus demand gap at roughly between 2–4 MMT per annum.

Closing this gap requires concerted efforts by players across the value chain. At the core of this effort is the need to accelerate awareness and widespread use of improved, disease-resistant maize seed varieties that can resist striga and fall armyworm infestation thereby boosting yield. According to IITA, Nigeria can close her maize production versus demand gap by increasing the number of farmers that uses hybrid variety seed from the current 10% to about 50% - 100%. All things being equal, this singular act can double the country's maize yield from the current ~2 tonnes/hectare to over 4 tonnes/hectare thereby causing annual production to increase to about 20 million metric tonnes.



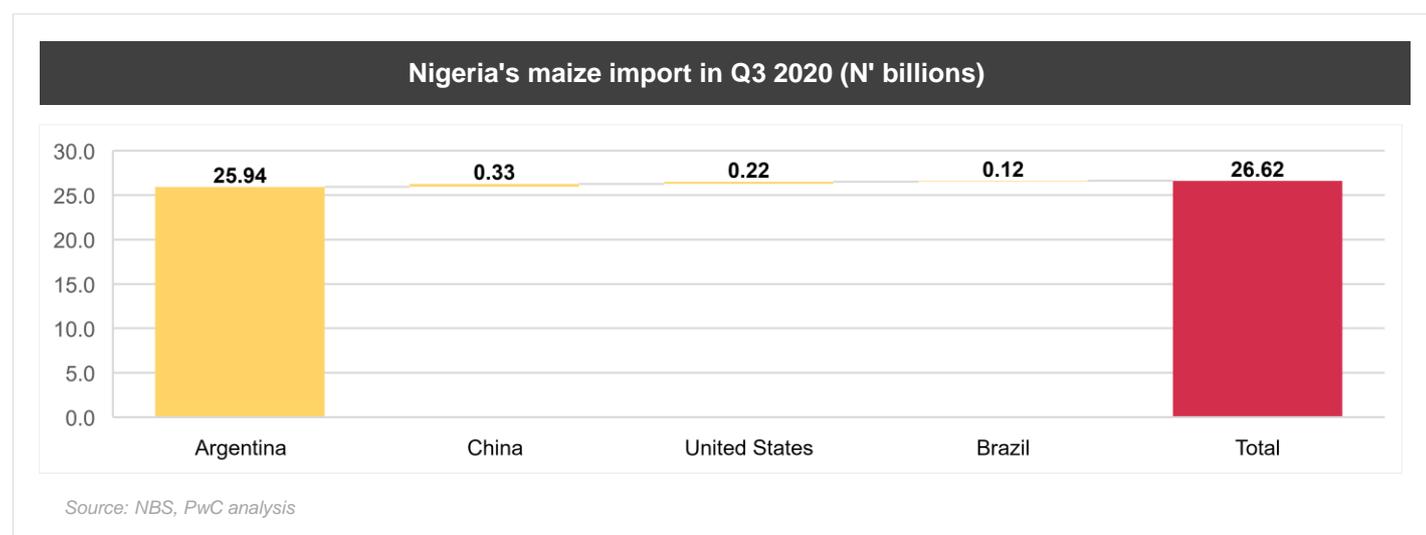
# Nigeria's maize export and import capacity

The volume and value of maize export by Nigeria is relatively small and most of the export is through informal trade channels across the Sahel. This is primarily due to an official export ban of maize in Nigeria. The underlying idea behind the ban is the need to satisfy local consumption needs. Despite the ban on export, the United States Department of Agriculture (USDA) puts the maize export from Nigeria in 2019 at about 50,000 metric tonnes (MT).<sup>3</sup>

Local maize demand continues to outstrip supply thus creating an annual demand gap of about 4 MMT. As a result of this, the country occasionally imports maize. However, importation of maize is highly restrictive as the Nigeria Custom Service charges tariff at about 5% of the value of maize imported into the country while the Central Bank of Nigeria (CBN) continues to uphold its forex ban for maize importation.

According to USDA, maize import into Nigeria doubled from 0.5 MMT to about 1 MMT between October 2019 and October 2020. In Q3 2020 alone, Nigeria imported about N26.6 billion worth of maize from Argentina, China, the United States and Brazil following the scarcity of maize that emerged as a result of production shortfall because of the growing insecurity in the country and unfavourable climatic change such as drought.

The foregoing underscores the country's not too impressive participation in the international trade for maize. If the factors militating against maize production in Nigeria are not adequately addressed, this will have dire consequences in the long term especially in the light of commencement of the African Continental Free Trade Area (AfCFTA) arrangement. This is more so that South Africa is adequately prepared to take the leadership position in the trade in maize in Africa as it is currently controlling the maize market in the Southern Africa region while Nigeria is yet to be able to satisfy its local market demand let alone exert dominance in the West African sub-region and by extension, the Africa continent.



3. [https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Grain%20and%20Feed%20Annual\\_Lagos\\_Nigeria\\_03-15-2021.pdf](https://apps.fas.usda.gov/newgainapi/api/Report/DownloadReportByFileName?fileName=Grain%20and%20Feed%20Annual_Lagos_Nigeria_03-15-2021.pdf)

# Challenges of maize farming in Nigeria

There are several challenges bedeviling maize farming in Nigeria. Some of these challenges include:

- **Inadequate capital:** As with other agricultural crops, maize farming is hampered by inadequate financing especially from deposit money banks. This is because many smallholder farmers in maize farming lack the necessary collateral to secure a structured loan. Although the share of credit to agricultural sector averaged 4.4% of total credit facilities since 2019, the bulk of these credits are channeled into the production of other national crops like rice, cocoa, etc. Credit facilities and seed supports from the CBN's Anchor Borrowers Programme (ABP) and Nigeria Incentive-Based Risk Sharing System for Agricultural Lending (NIRSAL) have been largely effective in bridging the maize finance gap in Nigeria. However, there is the need to further broaden sources of financing for maize farming into alternative financing options aside government grants and supports.
- **Poor agronomic practices:** Maize farming is carried out by smallholder farmers hence, it is largely subsistence-based. Unfortunately, many of these farmers do not observe good agronomic practices (GAP) such as the use of fertilisers, pesticides and herbicides for effective soil management and pest control. This has consistently resulted in poor yields, with attendant negative impact on the volume of output.
- **Use of poor maize seed variety:** The bulk of the maize seed varieties used by farmers in Nigeria are of low-yield in nature and are non-resistant to diseases, pests and droughts. According to IITA, just about 10% of maize farmers in Nigeria uses the hybrid varieties which give higher yields than the commonly used Open Pollinated Variety (OPV) by the farmers. Some of the farmers are reluctant to change thereby sticking with the use of the old maize varieties used by their forefathers, while others feel that the cost of improved maize seed varieties is too high. Essentially, farmers are not considering the economic aspect of production but are more focused on sustenance.
- **Insecurity in key maize production belts:** The widespread insecurity in some parts of the country has contributed to low production of maize in these regions. This is exacerbated by the incessant farmers-herders clashes which has led to destruction of farms across the country. Last year, the Maize Association of Nigeria had to reduce its production target of maize for 2020 by 25% – 30% citing insecurities and the outbreak of the COVID-19 pandemic.
- **Climatic changes:** The impact of changes in climatic conditions including unstable rainfall (which manifest itself in either prolonged drought or flash floods) has drastically hampered maize production in Nigeria. The effect is visibly noticeable in poor farming communities who depends majorly on maize production for income generation and source of livelihood with little or no other economic alternatives.
- **Inadequate storage and distribution facilities:** Nearly 30% of maize produced in Nigeria are wasted due to inadequate storage facilities.<sup>4</sup> Achieving significant gain in maize production in Nigeria will require sustainable investment in maize storage and distribution value chain.

4. <https://www.vanguardngr.com/2020/08/ban-on-maize-importation-not-sole-cause-of-price-increase-cbn/>



## Government's initiatives geared towards boosting maize farming in Nigeria

05

# Government's initiatives geared towards boosting maize farming in Nigeria

The FG and its agencies such as the CBN and the NEPC occasionally come up with different policies and programmes that seek to boost local maize production in the country. Some of the policies and programmes include the following:

## Anchor Borrowers Programme (ABP)

The ABP was launched in 2015 and is one of the major agricultural programmes undertaken by the CBN to boost Nigeria's agricultural value chain and drastically cut the country's food import bill. The ABP covers different crops ranging from rice, sorghum, millet, maize, oil palm, cashew, cassava among others. One of the focus of the ABP is to provide loans at 9% interest rate, as well as farm inputs like fertilizers, seedlings, pesticides etc. to smallholder farmers (SHF). The programme also links agro-processors with these SHFs to offtake the produce.

In June 2020, the CBN said it planned to target over 70,000 maize farmers. Each of these farmers will be given about N182,000 per hectare for the 2020 wet season maize farming.<sup>5</sup> By the end of 2020, over 150,000 maize farmers were said to have been empowered by the CBN's ABP through access to loans facilities, farm inputs etc.<sup>6</sup>

## FOREX restriction

The CBN officially added maize to its foreign exchange restriction list in June 2020. This means that importers would be unable to access foreign exchange from all CBN's official windows to import maize into the country. The decision to implement a forex restriction for the crop was borne out of the need to protect local maize farmers from cheap maize imports while ensuring a boost in local production to meet domestic demands.

However, other players across the maize value chain like animal feed millers and poultry farmers kicked against the move because it led to shortages in supply of maize which resulted to inflated maize prices that eroded their profit margin. To cushion the negative effect of the move, the Federal Government ordered the release of 300,000 MT from the national strategic grains reserve to support poultry farmers.<sup>7</sup> In addition, the CBN granted approval to four companies to import maize to the tune of 260,000 MT.

## Agricultural infrastructures

Nigeria's agricultural infrastructure are starkly inadequate to support the growth of the sector. The government is however putting in place initiatives to remedy these challenges. For instance, the government is establishing a Special Agro-Industrial Processing Zones (SAPZ) that would foster agricultural processing and boost end-to-end productivity of agriculture crops like maize from the farm to the market. More so, the existing rail infrastructures are being upgraded and new ones are being built to link agricultural communities with the market and the port.

5. <https://www.worldstagegroup.com/how-cbn-anchor-borrowers-programme-is-boosting-maize-production-nan/>

6. <https://www.premiumtimesng.com/news/headlines/435678-special-rrport-how-nigerias-maize-production-has-grown-since-1960.html>

7. <https://www.vanguardngr.com/2021/01/anchor-borrowers-programme-farmers-to-release-300000mt-maize-next-month/#:~:text=Maize%20farmers%20under%20the%20Anchor,the%20current%20price%20of%20maize.&text=Also%20speaking%20in%20the%20same,under%20the%20maize%20production%2C%20Dr.>

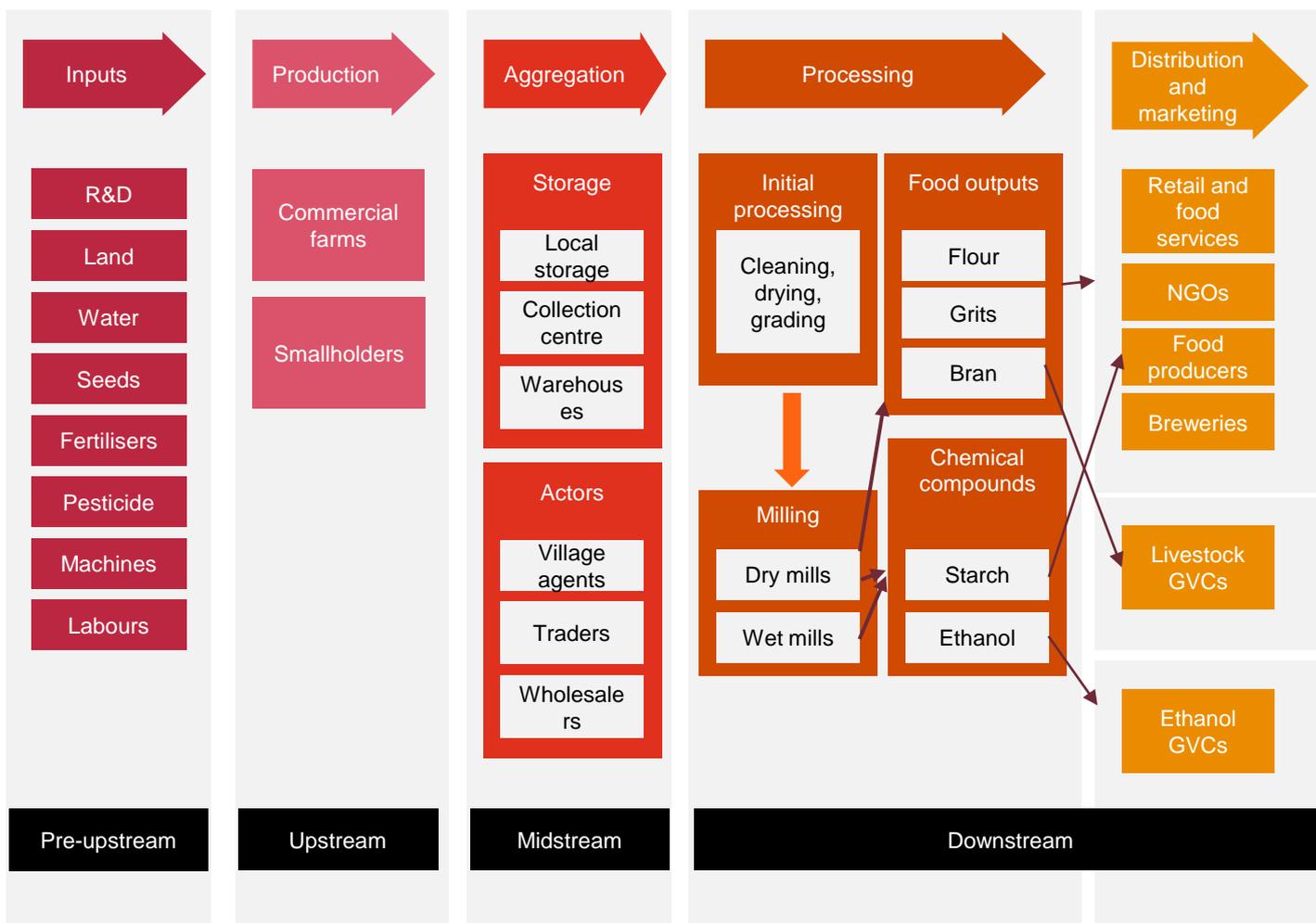


# Evaluation of the maize value chain in Nigeria

06

# Evaluation of the maize value chain in Nigeria

The maize value chain is broken into pre-upstream, upstream, midstream and downstream. Maize by products include maize syrup, maize starch, maize gluten, maize fibre, maize germ etc.



Source: ResearchGate, PwC analysis

Maize is used for various purposes in Nigeria. Fresh maize can be boiled or roasted, and it is a very popular staple food across many Nigerian households. Also, maize is highly sort after in the Nigerian industrial sector especially in livestock feed manufacturing, breweries, and confectioneries by FMCGs companies. It is estimated that 6.5% of maize produced in Nigeria is used by brewing companies to produce beers while 13% is used for the manufacturing of industrial flours, corn flakes and other confectionaries. Household consumption accounts for between 10-15% of total maize produced in Nigeria.

Livestock feed manufacturers are by far the largest consumers of Nigeria's maize production. Roughly 45.5% of maize produced in the country are used to manufacture animal feeds

especially aquaculture and poultry feeds. Maize makes up 60 – 65% of poultry feeds constituents. Interestingly, about 98% of all animal feeds produced in Nigeria is used by poultry farmers. Given a rapid growth in Nigeria's population, chicken and egg consumption is expected to rise in the coming years and that would in turn lead to increased maize demand for animal feeds production.

This expectation, coupled with reduction in maize production on the back of widespread insecurity in core maize production belts in Nigeria and the impact of COVID-19, have led to increase in prices of maize in the country. According to USDA, the prices of maize in the domestic market increased daily between January and February 2021.



How Nigeria maize farmers can take advantage of opportunities presented by AfCFTA

# How Nigeria maize farmers can take advantage of opportunities presented by AfCFTA

Some of the ways Nigeria can optimize the gain from the opportunities AfCFTA offers include:

## 1. Review tariff and non-tariff barriers on agricultural commodities like maize

At the core of the AfCFTA is the need to dismantle existing tariff and non-tariff barriers amongst member-states. In effect, the AfCFTA agreement will ensure that countries with already developed maize trading system such as South Africa, can easily penetrate other markets compared to countries with existing embargo on cross-border maize trading as is the case with Nigeria. Therefore, Nigeria should begin to review its export ban on maize and provide targeted support to maize farmers to boost yield and expand production to meet domestic need and subsequently, seize the opportunity to supply to other markets across Africa and beyond.

## 2. Use high-yield, disease-resistant maize seed varieties

The low maize production and quality standard can be overcome through the use of high-yield, disease resistant maize seed varieties developed by trusted agricultural research bodies like the International Institute of Tropical Agriculture (IITA), the Institute of Agricultural Research and Training (IAR&T), the Agricultural Research Council of Nigeria (ARCN) etc. For instance, the IAR&T recently developed a maize variety called "Ife maize hybrid 1 to 8 which is capable of producing between 3.5 – 9.5 tonnes of maize per hectare both on-station and farm level. Appropriate framework should be developed to dispatch this variety, at relatively subsidized rate, to maize farmers across the country.

The recently passed Plant Variety Protection (PVP) Act by the government is a step in the right direction in incentivizing seed companies and agribusiness investors in seed breeding and development in the country.

## 3. Promote mechanised maize production

Mechanised farming will boost maize yield and ensure that production meets up with growing demand in the local and global markets. Government should put in place measures that incentivize investment inflow into agricultural mechanization. More so, proper mapping of maize farming zones should be carried out and farm machines like tractors should be provided in each of the zones to enable smallholder farmers hire for use at affordable rates. In this regard, the government can adopt and consolidate on NIRSAL's Agricultural Commodities Ecological Area (ACEA) to identify clusters of maize farmers and their farming needs.

## 4. Strengthen value-chain linkages for maize-based products

Value chain linkages for maize-based products is currently weak. While the upstream (farming) segment is dominated mainly by smallholder farmers, only few players exist in the midstream to downstream (i.e. storage, distribution, marketing and distribution) segments. With the takeoff of AfCFTA, Nigeria should put measures in place that will make it possible to effectively compete with other big maize markets in the continent. Actualising this feat requires adopting a value-chain approach for designing and executing maize policy frameworks.

## 5. Scale the power of commodity exchanges such as AFEX, NCX, others

Commodity exchanges play a key role in stimulating agricultural crop production because they provide ready market for farmers to sell their produce at market-determined rate. Fortunately, Nigeria has some of the largest agricultural commodity exchanges in Africa. The country's two biggest commodity exchanges are AFEX Limited and the Nigerian Commodity Exchange (NCX).

Providing the needed support to these exchanges could help to enhance agro-commodity marketing, stabilize agricultural commodity prices and reduce food inflation, minimize post-harvest losses and stimulate export competitiveness. These commodity exchanges would ensure that smallholder farmers are brought into the financial system thus boosting financial inclusion in line with the CBN's goal. More so, commodity exchanges will provide vital data that could be leveraged to better understand the dynamics of the domestic maize market. For instance, maize accounts for more than half of commodities traded on AFEX since 2016 till date, a feat which shows the increasing demand for the commodity.

In that light, we view the CBN's recent plan to recapitalize the NCX for efficient operations as a commendable one. Essentially, the relevant regulatory authorities should continue to create a level playing field for all players in the system.

# How Nigeria maize farmers can take advantage of opportunities presented by AfCFTA

Some of the ways Nigeria can optimize the gain from the opportunities AfCFTA offers include:

## 6. Aggregation and backward/forward integration

Encouraging backward/forward integration especially among large maize agro-processors and distributors such as Olam, WACOT, Livestock Feeds Plc, UAC, Flour Mills of Nigeria etc. will help to promote mechanized maize farming and increase maize yield and output beyond the current lackluster level. The large-scale maize production will help to substantially reduce the domestic demand gap while generating surplus for the export market. These backward/forward integration initiatives could be done in such a way as to promote inclusiveness of smallholder farmers through aggregation.

Smallholder farmers and small-sized maize agro-processors generally face difficulties assessing financing and international markets compared to large-sized maize producers and agro-processors. This is because their output level is generally low, and the cost of meeting international quality standards are quite high. Through aggregation methods, these small players across the maize value chain would be able to access other markets in Africa thereby protecting their source of livelihood.

## 7. Support agricultural research and development (R&D)

Agricultural R&D play a key role in maize farming. Adequate funding should be made readily available for state-managed agricultural research institutions and support or incentives should be given to private ones. One way to do this is for the government to expedite the passage of the Agricultural Research Council of Nigeria (ARCN) Amendment Bill which seek to establish an Agricultural Endowment Fund. This is important considering the low budgetary allocation to agricultural research and the elongated time it takes for allocated fund to be disbursed to research institutions.

In addition, efforts must be geared towards commercializing research outputs and educating smallholder farmers on good farmers on good agronomic practices. For instance, modalities must be put in place to distribute hybrid maize seedlings to farmers at a relatively subsidized rates, while extension officers should be trained and dispatched to key maize farming communities to raise awareness on good farming practices including fertilizer applications, new seed varieties, good harvesting and packaging techniques that avoid wastages etc.

## 8. Take steps to derisk maize farming

Maize farming is a risky venture in Nigeria considering the market dynamics, inadequate financing, changing climatic conditions, incidences of soil mismanagement, occasional outbreak of pest and diseases, widespread insecurities in maize farming zones etc. To reap maximum gain requires derisking maize production across the different segmentations of the value chain – pre-upstream, upstream, mid-stream and downstream. One of the foremost agricultural derisking platform in Nigeria is NIRSAL. By aggregating smallholder maize farmers into an Agro Geo-Cooperatives in Agricultural Commodities Ecological Areas that is less risky to maize farming, NIRSAL has been able to derisk and attract funding guarantee recovery for maize farming in Nigeria.



## Conclusion

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# Conclusion

In conclusion, governments, maize producer/user associations and other relevant stakeholders across the maize value chain must recognize the importance of maize in industrial production, household nutrient needs and generation of export earnings. Efforts should therefore be geared towards ramping

up production to meet domestic needs. Actualising this would require subsidizing improved maize seed varieties for massive adoption, developing alternative sources for maize production financing in addition to the CBN's intervention programmes, amongst others.



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