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FROM FARM TO FUTURE

Thoughts on Food Security, Farmers' Prosperity and Fiscal Stability in Nigeria



June 2022

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Thoughts on Food Security, Farmers' Prosperity and Fiscal Stability in Nigeria

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Executive Summary

Nigerian households are grappling with a cost-of-living crisis as prices of goods and services continue to rise significantly faster than wages, cutting spending power.

Wages grew by 9.45%[1] on a year-on-year basis between 2019 and 2021, while the inflation rate averaged 14.08%[2] within the same period. The cost-of-living crisis has further been exacerbated by accelerating food inflation.

Food Inflation in Nigeria is one of the highest among emerging economies. The average rate at which food prices have increased in Nigeria yearly is 17.31%[3] between May 2019 and April 2022.

Given that Food accounts for 56.65%[4] of the overall expenditure of households in Nigeria, the impact of high food prices on the welfare of the "working poor" and "have not" is significant.

Rising food prices make it difficult for households with little or no income to afford basic necessities and mobilise savings and the associated negative impact on people, regardless of income status.[5]

The combination of new and ongoing forces is driving the food price crisis in Nigeria. It would be insufficient to address the food price crisis Nigeria is presently undergoing with general macroeconomic instruments alone. Governments at the national and sub-national levels will need to address the high food prices challenges with innovative policy interventions.

While policy intervention in the short run may look to expand social protection programs for the poorest and most vulnerable people affected by rising food prices, in the long run, effective and coherent actions will be needed to resolve the core factors impeding the supply of agricultural products.

One obvious factor behind rising food prices in Nigeria is low agricultural productivity. The central government, in Nigeria's National Development Plan (NDP)[6] connects the productivity challenges to factors ranging from poor land tenure system, climate change, low level of irrigation, old agronomy practices, land degradation, low technology uptake, high production cost, poor distribution of inputs, limited financing, high post-harvest losses and poor access to markets, among others.

1 https://nigerianstat.gov.ng/download/1241168

2 https://nigerianstat.gov.ng/download/1241170

3 https://nigerianstat.gov.ng/resource/cpi_1NewAPR2022.xlsx

4 https://www.nigerianstat.gov.ng/pdfuploads/Consumption%20Expenditure%20Pattern%20in%20Nigeria%202019.pdf

5 Okuneye, P. A. "Rising cost of food prices and food insecurity in Nigeria and its implication for poverty reduction." Economic and Financial Review 39, no. 4 (2001): 6.

6 https://nationalplanning.gov.ng/wp-content/uploads/2021/12/NDP–2021–2025_AA_FINAL_PRINTING.pdf

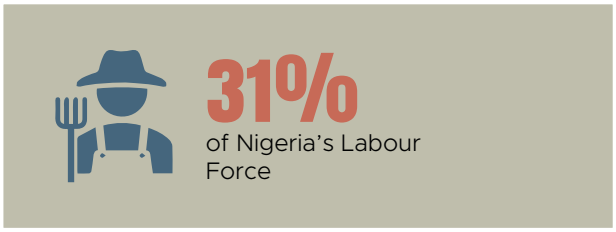
The economic dilemma of Nigeria's agriculture sector is that while it employs the **largest proportion (31%) of Nigeria's labour force and contributes 89% of the country's Gross Domestic Product (GDP)**, the sector only contributes **0.38% of the federal government revenue and incurred a trade deficit of 146 billion (146,199,860,000), as of 2021.**

Farmers operating in an environment of inadequate infrastructure like roads and electricity have complained about late or non-distribution of fertilisers and seedlings, difficulty accessing loans and subsidies, and lack of storage and processing capacity.

Policy interventions have done little to address the challenges of poor access to agric equipment, the low capacity of farmers and extension workers on climate-resilient and sustainable agricultural practices, and the limited number of extension workers.

Thus, this paper takes a critical look at the Nigerian agricultural sector, it examines in detail the factors that are impeding agricultural productivity, the impact of these factors on food prices, and identifies the policy interventions that could be useful to address the food price crisis and re-inflate the Nigerian economy towards the growth trajectory.

Nigeria's Agriculture Sector



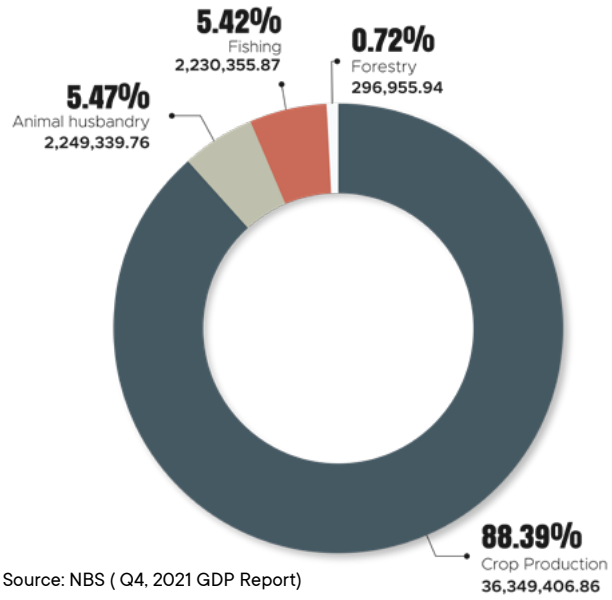
1.0 Overview of Nigerian Agricultural Sector

The Agriculture sector (which includes Crop production, Forestry, Animal husbandry and Fishing) accounts for about 26.84% of economic activities in Nigeria. About 98% of the food consumed in Africa's largest economy, Nigeria, comes from farms that are less than 10 hectares in size[7]. The agricultural sector remains the largest employer in Nigeria, accounting for more than 30.6%[8] of jobs in Nigeria.

Diversity of the Agriculture Sector

In terms of composition, crop Production accounts for 88.39% of economic activities in Nigeria's Agriculture sector. Animal husbandry and Fishing account for 5.47% and 5.42%, respectively (see figure below).

Figure 1: Diversity of the Agriculture Sector (GDP in million Naira)



Source: NBS (Q4, 2021 GDP Report)

Employed Persons in the Agriculture Sector

In Africa's largest economy, about 14.84million or 30.6%[9] of people working in Nigeria are engaged in the Agriculture sector. The sector remains the largest employer of labour in the country (see table below).

Table 1: Number of Employed Persons per Sector

Sector	Number of Employed Persons	Percentage of Employed Persons by Sector
Agriculture	14,837,693	30.57%
Manufacturing	5,337,000	11.00%
Construction	1,142,569	2.35%
Wholesale and Retail Trade; repair of motor vehicles and motorcycles	12,097,189	24.93%
Transportation and Storage	2,009,183	4.14%
Accommodation and Food Service Activities	2,730,308	5.63%
Information and Communication	469,513	0.97%
Education	1,557,665	3.21%
Human, Health and Social work Activities	739,936	1.52%
Arts, Entertainment and Recreation	390,275	0.80%
Others	7,221,988	14.88%
National	**48,533,319**	**100.00%**

Source: NBS (Labour Force Statistics, 2010)

Composition of Agriculture Jobs

About 94.02% of the people working in the agriculture sector are engaged in Crop Production, Animal husbandry, hunting and related service activities. The Fishing and aquaculture sector employs about 603,728, while

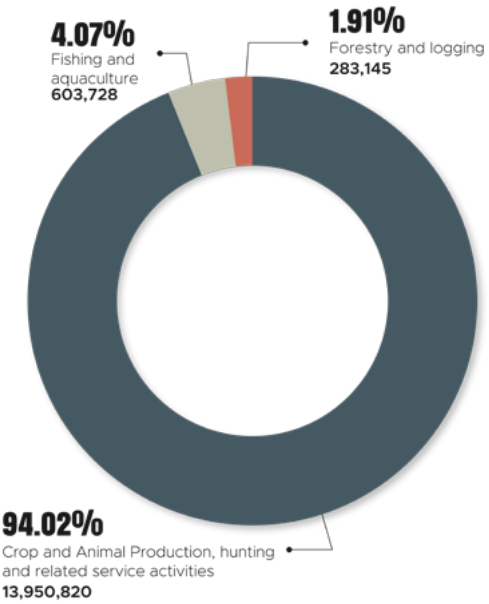
7 https://www.eajournals.org/journals/international-journal-agricultural-extension-rural-development-studies-ijaerds/vol-3-issue-2-may-2016/review-smallholder-farming-nigeria-need-transformation/

8 https://nigerianstat.gov.ng/download/41

9 https://nigerianstat.gov.ng/download/41

283,145 persons are employed in the Forestry and logging sub-sector of the agriculture sector.

Figure 2: Composition of Agriculture Jobs (Number of Employed person)



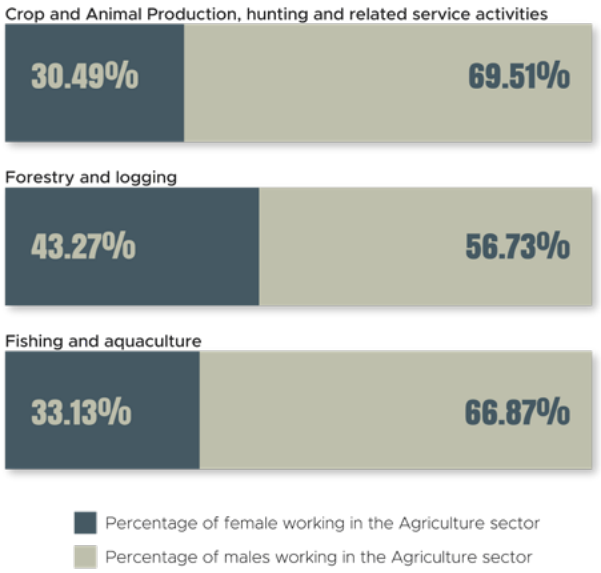
Source: NBS (Labour Force Statistics, 2010)

Agriculture Jobs by Gender

In terms of gender, 69.16% of those working in the agriculture sectors identify themselves as males. Aggregate data presented below shows that females comprise about 30.49% of the agriculture labour force, marginally lower than the global average of 43%[10].

Regarding composition, the Female labour force participation rate was highest in the forestry and logging sub-sector. About 43.27% of people working in the forestry and logging sub-sector are females, which is lower than the national average female labour force participation rate of 45.5%[11]. 33.13% of workers in the Fishing and aquaculture sub-sector are female, while the female labour force participation rate stood at 30.49% for the Crop and Animal Production, hunting and related service activities.

Figure 3: Agriculture Jobs by Gender



Source: NBS (Labour Force Statistics, 2010)

Formal & Informal Sector

About 41.43% of economic activity in Nigeria is conducted by businesses that are not formally registered. Given that the perception is that most informal sector players are not registered, nor do they remit taxes. **About 91.85% of agricultural activities occur informally[12]**. In terms of composition, 92.50% of crop production activities happen informally.

10 https://genderdata.worldbank.org/data-stories/flfp-data-story/

11 https://genderdata.worldbank.org/data-stories/flfp-data-story/

12 http://www.nigerianstat.gov.ng/download/403

Table 2: Split of Formal and Informal Sector

Economic Activity	Share of Informal Sector GDP%
Agriculture	**91.85**
Crop Production	92.50
Livestock	89.60
Forestry	72.10
Fishing	87.40

Source: NBS (Formal and Informal Sector Split of Gross Domestic Product, 2016)

Contribution of the Agriculture sector to Government Revenue mix

The Agriculture sector is the largest sector in Nigeria contributing an average of 26.84% to the nation's GDP. However it contributed only 0.38% of non-oil revenue (company income tax and value-added tax) collected between 2015 and 2021. The contribution of the agric sector has improved marginally from the 2015 level of 0.21% to 0.38% in 2021 (its highest sectoral contribution within the review period).

Table 3: Contribution of the Agriculture sector to Government Revenue mix

Year	Contribution of the Agriculture Sector to Non-oil revenue (Amount in Naira)	Total Non-Oil Revenue collected (Amount in Naira)	Percentage contribution of the agriculture sector
2015	4,793,891,408.62	2,268,701,169,560.13	0.21%
2016	4,795,674,015.07	1,796,920,201,213.77	0.27%
2017	6,383,691,724.14	2,222,243,971,218.82	0.29%
2018	8,908,643,015.27	2,524,357,766,382.56	0.35%
2019	9,771,904,859.32	2,811,209,390,939.48	0.35%
2020	10,202,569,846.57	2,940,614,560,214.93	0.35%
2021	14,361,718,763.73	3,757,902,804,464.17	0.38%

Source: NBS, FIRS

Contribution of the Agriculture sector to Company Income tax

The company tax uptake from the Agriculture sector stood at 0.64%, up from the 2015 low of 0.21%. The low contribution can be connected partly to the informal nature of the agriculture sector - as approximately 91.85% of activities happen informally.

Table 4: Contribution of the Agriculture sector to Company Income tax

Year	Contribution of the Agriculture Sector to Company Income Tax (Amount in Naira)	Total Company income tax collected (Amount in Naira)	Percentage contribution of the agriculture sector
2015	2,974,321,002.68	1,384,546,396,697.93	0.21%
2016	3,043,351,770.99	1,019,415,505,081.90	0.30%
2017	4,510,031,706.80	1,249,895,563,689.60	0.36%
2018	6,440,711,551.04	1,416,317,200,185.99	0.45%
2019	7,151,055,872.39	1,626,628,811,575.61	0.44%
2020	5,866,744,170.05	1,409,443,750,294.65	0.42%
2021	10,792,003,983.42	1,685,050,934,393.59	0.64%

Source: NBS, FIRS

Contribution of the Agriculture sector to Value Added Tax

The Value Added Tax (VAT) uptake from the Agriculture sector when compared with total VAT revenue has declined from 2020 high of 0.28% to 0.17% in fiscal year 2021. Most agri-businesses are not registered for VAT purposes. In Nominal terms, VAT uptake has grown from 2015 level of N1.82 billion to N4.33billion in 2020 before dropping to N3.57billion.

Table 5: Contribution of the Agriculture sector to Value Added tax

Year	Contribution of the Agriculture Sector to Value Added Tax (Amount in Naira)	Total Value Added tax collected (Amount in Naira)	Percentage contribution of the agriculture sector
2015	1,819,570,405.94	884,154,772,862.20	0.21%
2016	1,752,322,244.08	777,504,696,131.87	0.23%
2017	1,873,660,017.34	972,348,407,529.22	0.19%
2018	2,467,931,464.23	1,108,040,566,196.57	0.22%
2019	2,620,848,986.93	1,184,580,579,363.87	0.22%
2020	4,335,825,676.52	1,531,170,809,920.28	0.28%
2021	3,569,714,780.31	2,072,851,870,070.58	0.17%

Source: NBS, FIRS

Agricultural export and Import

Nigeria's cumulative agricultural imports between 2016 and 2021 stood at N6.47 trillion or approximately 7.88% of total imports. In 2019, 2020 and 2021, Nigeria spent N959 billion, N1.14 trillion and N1.97 trillion respectively importing agricultural products like wheat, sugar, fish and milk. Food/Agriculture grew from 2016 level of N656.43 billion and now account for 9.44% of Nigeria's total import in 2021.

Table 6: Component of Agriculture Import

Year	Agriculture Import (N'million)	Total Import (N'million)	Agriculture component of import
2016	656,427.68	8,817,557.74	7.44%
2017	886,790.49	9,562,719.82	9.27%
2018	851,624.43	13,165,127.35	6.47%
2019	959,508.38	16,959,875.06	5.66%
2020	1,145,121.49	12,700,943.81	9.02%
2021	1,966,893.49	20,843,664.95	9.44%

Source: NBS

The share of agriculture in Nigeria's total export earnings remains small compared to import. For instance, Nigeria spent N1.97 trillion importing foods and agriculture products in 2021 compared to export earnings of only N504 89 billion. Cocoa, Sesame and Cashew nuts account for more than half of Nigeria's agricultural exports. Agricultural exports increased to N504.89 billion in 2021 or 2.67% of total export. In 2016 and 2017, agriculture export as a%age of total export was 0.71% and 1.25% respectively.

Table 7: Component of Agriculture Export

Year	Agriculture Export (N'million)	Total Export (N'million)	Agriculture component of Export
2016	60,709.15	8,527,430.99	0.71%
2017	170,427.18	13,598,277.30	1.25%
2018	302,282.14	18,532,039.90	1.63%
2019	269,829.29	19,192,234.10	1.41%
2020	321,539.25	12,522,684.40	2.57%
2021	504,894.89	18,907,788.70	2.67%

Source: NBS

Nigeria remains a net food importer — the agricultural trade deficit has widened with imports exceeding exports by N1.46 trillion in 2021 compared to a period low of N549.34 billion in 2018. The agricultural trade deficit continues to expand in nominal terms growing from N595.72 billion in 2016 to approximately N1.46trillion in the fiscal year 2021.

Table 8: Agricultural Trade Deficit

Year	Agriculture Import (N'million)	Agriculture Export (N'million)	Agricultural Trade Deficit (N'million)
2016	656,427.68	60,709.15	595,718.53
2017	886,790.49	170,427.18	716,363.31
2018	851,624.43	302,282.14	549,342.29
2019	959,508.38	269,829.29	689,679.09
2020	1,145,121.49	321,539.25	823,582.24
2021	1,966,893.49	504,894.89	1,461,998.60

Source: NBS

2.0 Challenges of the Nigerian agricultural sector

Commercial Bank Loans And Advances To The Agriculture Sector Remain Low

The government of Nigeria has provided several interventions through the Central Bank of Nigeria (CBN) to boost loans to the agriculture sector. Initiatives such as the Anchor Borrower's Programme and the Agricultural Credit Guarantee Scheme Fund (ACGSF) seem not to have yielded the required outcome. Commercial bank loans and advances to the agriculture sector remain low. Despite the Agriculture sector accounting for about 26.84% of economic activities in Nigeria, commercial bank loans to the sector that employs 30.6% of the labour force stood at 5.15%. In 2014, Commercial Banks' Loans and Advances to the Agriculture Sector was N478.91 billion or 3.72% of total commercial bank loans (see table 9).

Table 9: Commercial Banks' Loans and Advances to the Agriculture Sector

Year	Commercial Banks' Loans to the Agricultural Sector (N'billion)	Total Commercial Bank Loans (N'billion)	Percentage of Loans to the agriculture sector
2014	478.91	12,889.42	3.72%
2015	449.31	13,086.20	3.43%
2016	525.95	16,117.29	3.26%
2017	528.24	15,740.59	3.36%
2018	610.15	15,134.20	4.03%
2019	772.38	17,187.77	4.49%
2020	1,049.68	20,373.49	5.15%

Source: Central Bank of Nigeria

Interventions aimed at boosting loans to the agric sector centred around boosting food crop outputs.

About 51.12% of loans advanced to farmers under the Agricultural Credit Guarantee Scheme Fund are directed at improving food crops productivity (grains, root and tuber, beans and soybeans, and vegetables). In 2020, 43% of loans advance to farmers under the food crop sub-sector were directed at boosting grain production.

Table 10: Agricultural Credit Guarantee Scheme Fund (ACGSF) - Commercial Banks' Loans and Advances

Year	Total Cash Crop (N'billion)	Total Food Crops (N'billion)	Total Livestocks (N'000)	Fishery (N'000	Others (N'000)	Grand Total (N'000)
2014	482,556	6,976,104	2,342,247	453,426	2,201,918	12,456,251
2015	406,750	6,851,875	1,444,013	485,089	1,669,654	10,857,381
2016	465,115	5,163,766	1,169,448	444,763	615,551	7,858,643
2017	520,425	3,626,100	768,086	387,084	547,694	5,849,389
2018	452,535	2,424,620	626,244	301,348	572,879	4,377,626
2019	487,590	1,947,389	725,463	313,705	594,186	4,068,332
2020	425,930	2,209,170	753,748	253,705	679,111	4,321,664

Source: Central bank of Nigeria

Intervention aimed at boosting loans to the agric sector not focused on boosting agriculture export

Loans directed at boosting productivity of cash crops like oil palm, rubber, cotton, groundnut and ginger under the Agricultural Credit Guarantee Scheme Fund remain below the desirable level.

In 2020, the total outstanding loan directed at cash crop under the ACGSF scheme was only N425.93 million, down from the 2014 level of N482.56 million.

Table 11: Agricultural Credit Guarantee Scheme Fund (ACGSF) - Commercial Banks' Loans and Advances

Year	Total Cash Crop	Total Food Crops	Total Livestocks	Fishery	Others
2014	3.87%	56.00%	18.80%	3.64%	17.68%
2015	3.75%	63.11%	13.30%	4.47%	15.38%
2016	5.92%	65.71%	14.88%	5.66%	7.83%
2017	8.90%	61.99%	13.13%	6.62%	9.36%
2018	10.34%	55.39%	14.31%	6.88%	13.09%
2019	11.99%	47.87%	17.83%	7.71%	14.61%
2020	9.86%	51.12%	17.44%	5.87%	15.71%

Source: Central Bank of Nigeria

Low crop yield

Agriculture productivity remains low and crop yield remains below the global average in most cases. Global yields of main crops (wheat, rice, maize, and soybean) have increased by an average of 1 to 2% per year during the last decades, but Nigeria is yet to leverage technological breakthroughs to catch up with the rest of the world. Soybean Oilseed yield in Egypt is three times its size in Nigeria. Egypt is harvesting approximately 8 metric tons of maize per hectare while Nigeria's remains low at 1.69 metric tons per hectare.

Table 12: Crop yield - Nigeria vs the rest of the world (estimate 2021)

Selected Grains	Yield tons per hectare	Grain Yield - Country ranking
Maize	1.69	86
Sorghum	1.19	52
Rice	2.04	77
Millet	1.01	13
Soybean	1.26	36
Wheat	1.01	64

Source: United States Department of Agriculture, IITA, FMARD

Low mechanisation

Majority of farmers in Nigeria are smallholder farmers cultivating on less than 2 hectares of land[13]. Many smallholder farmers who lack the economic power to deploy heavy farm equipment on their farms continue to use hand tool technologies which inevitably impede their ability to raise productivity.

The International Conference of the West African Society of Agricultural Engineering puts the figure of farmers using hoes, cutlass and other hand-operated tools at 90% of farmers in Nigeria[14].

Table 13: Agricultural Mechanisation Level in Nigeria (operating mode)

Operating Mode	Mechanisation Level
Engine Powered Technology	3%
Hand Tools	90%
Animal Drawn Technology	7%

Source: (Onwualu and Pawa 2004)[15]

13 http://www.afgoesdigital.com/securefarmer-more-productive-farmers-through-technology-and-mechanisation/#:~:text=%5B6%5D%20Currently%2C%20Nigeria's%20mechanisation,of%201.5%20horsepower%20per%20hectare.

14 http://www.kinki-ecotech.jp/download/Ghana%20Sawah%20Workshop%20Papers/AZOGU%20et%20alWorkshopPaper.pdf

15 Onwualu, A. P. and N. P. Pawa. 2004. Engineering infrastructure for the manufacture of agricultural engineering machines in Nigeria: The role of NASENI. Proc. 2nd International

Nigeria's mechanisation has remained low at 0.06 horsepower per hectare[16] well below the FAO's recommended rate of 1.5 horsepower per hectare. The mechanisation rate stood at 2.6 horsepower per hectare in India and 8 horsepower per hectare in China.

Table 14: Agriculture Mechanisation Rate

Country	Mechanisation Rate (horsepower per hectare)
Nigeria	0.06
India	2.6
Vietnam	2.2
China	8.0
FAO Recommendation	1.5

Source: FAO

The number of agricultural tractors in Nigeria is estimated to be around 22,000, in contrast with 1 million and 2.5 million in China and India respectively. Tractors per 100 square kilometres of arable land remain below sub-Saharan Africa's average (see table below)

Table 15: Agricultural machinery, tractors per 100 sq. km of arable land

Country	Tractors per 100 sq. km of arable land
Nigeria	6.7
Sub-Saharan Africa	27.5
World	199.4
Zimbabwe	64.3
South Africa	47.5
Morocco	49
Kenya	25.2

Source: https://data.worldbank.org/indicator/AG.LND.TRAC.ZS?locations=MA

Low Adoption of Improved Seeds

The adoption of improved seeds and new farming methods in Nigeria remains suboptimal. Despite enormous resources spent on research and developing quality seeds/seedlings, with the overarching goal of resisting pest attacks, reducing water intake and increasing yield, adoption remains low.

In Nigeria, Africa's largest economy, only 10.1% of farms use improved seeds (see table below for full breakdown.

Table 16: Use of Farm input (% of cultivated plots)

Region	% Used Improved Seed
North Central	3.2
North East	7.2
North West	9.7
South East	9.7
South South	21
South West	8.3
Urban	16
Rural	9.3
Nigeria	10.1
Male-Headed Households	9.80
Female-headed Households	12.00

Source: Living Standards Measurement Study–Integrated Surveys on Agriculture, 2019

Low fertiliser usage

The majority of farmers in Nigeria often complain about low productivity which they attribute to the depletion of soil nutrients and the expensive nature of essential farming inputs like fertilisers. The Food and Agricultural Organisation (FAO) reports on fertiliser use intensity among Nigerian farmers reveal that at about 13 kg/ha, the fertiliser use rate among farmers in Nigeria was far below the 200 kg/ha recommended by FAO for the sub-Saharan African countries.

About 64.6% of crops grow without any form of fertiliser. With depleting soil nutrients, low fertiliser uptake is also a leading cause of low crop yield.

16 http://www.afgoesdigital.com/securefarmer-more-productive-farmers-through-technology-and-mechanisation/#:~:text=%5B6%5D%20Currently%2C%20Nigeria's%20mechanisation,of%201.5%20horsepower%20per%20hectare.

Table 17: Use of Farm input (% of cultivated plots)

Region	% Used Inorganic fertiliser	% Used organic fertiliser
North Central	31.6	10.9
North East	45.2	23.3
North West	69.1	59.8
South East	29.5	14.7
South South	5.6	2.1
South West	1.8	0.4
Urban	27.9	12.1
Rural	36.3	24.4
Nigeria	35.4	23.1
Male-Headed Households	37.7	25.2
Female-headed Households	20.6	9.6

Source: Living Standards Measurement Study–Integrated Surveys on Agriculture, 2019

Herbicide and Pesticide adoption remains low

In Nigeria, Only 13.1% of farms use pesticides to control various pests, weeds, insect infestation and diseases. Adoption is, however, higher in the northeast and northwest geopolitical zone.

However, compared to countries like India (with 76% adoption rate[17]) and with little or no alternative, the low adoption impacts crop yield significantly. Equally, herbicide adoption remains low. Only 34.7% of farms under cultivation use herbicides to control weeds (see table below).

Table 18: Use of Farm input (% of cultivated plots)

Region	% Used Pesticide	% Used Herbicide
North Central	9.2	69.3
North East	24.3	57.1
North West	21.4	23.4
South East	4.7	12.4
South South	1.0	20.0
South West	23.9	29.7
Nigeria	13.1	34.7
Male-Headed Households	14.4	37.2
Female-headed Households	5.2	18.8

Source: Living Standards Measurement Study–Integrated Surveys on Agriculture, 2019

Old Agronomy practice

In Nigeria, only 20.7% of farming households receive extension services. The majority of smallholder farmers often complain about the lack of adequate knowledge about climate resilience farming and other modern agronomy practices.

Few farmers have come in contact with extension workers, and very few have access to some form of capacity-building to improve farming practices. Nigeria is yet to leverage technology to reach more farmers.

Table 19: Participation in Extension Services (% of farming household)

Region	2019	2013
North Central	21.9	18.7
North East	20.7	16.5
North West	32.2	7.4
South East	8.8	7.9
South South	13.1	4.6
South West	20.7	19.0
Nigeria	20.7	10.9
Male-Headed Households	21.9	11.1
Female-headed Households	13.7	10.8

Source: Living Standards Measurement Study–Integrated Surveys on Agriculture, 2019

Inadequate Transportation infrastructure

Good road network plays an important role in agriculture in Nigeria because it is the main means of transporting agricultural produce from

17 https://www.ncbi.nlm.nih.gov/pmc/articles/PMC2984095/

the farms to the markets. Also, the good road is critical to ensuring farm inputs move from market to farm at a reasonable price.

Nigeria has a relatively dense but largely deteriorated road network due to a lack of maintenance culture. The network includes federal highways (34,000 kilometres), State roads (30,000 kilometres) and rural roads (130,000 kilometres).

In Nigeria, 60%[18] of roads in rural areas are mostly not motorable. Even where motorable roads exist in rural areas, they mostly have unpaved surfaces, narrow widths, circuitous alignment, and low-quality bridges.

Due to the deplorable status of most rural roads in Nigeria, most farmers cannot get products to market at a reasonable price - thus are forced to sell produce below market price to middlemen. Also, the associated cost of bringing in inputs and equipment is a huge disincentive for farmers - especially smallholder farmers.

Access to Finance

Financial exclusion has a negative socio-economic impact on the population. Despite approximately 55% of Nigerians residing in rural areas[19], fewer than 2% of rural households have access to any sort of institutional finance[20].

The government's Anchor Borrowers Programme seems to have improved access as the president claims that the scheme has supported over 4.8 million smallholder farmers across Nigeria[21].

However, headline information shows the agricultural sector was given only 5.15% of total bank loans and advances in Nigeria despite the sector accounting for about 26.84% of economic activities in the country.

Table 20: Commercial Banks' Loans and Advances to the Agriculture Sector

Year	Percentage of Loans to the agriculture sector (N'Billion)
2014	3.72%
2015	3.43%
2016	3.26%
2017	3.36%
2018	4.03%
2019	4.49%
2020	5.15%

Source: Central Bank of Nigeria.

Lack of Agricultural asset (Collateral assets)

Bankable agriculture assets are critical if Nigeria is to increase credit and advance to the agriculture sector. Unfortunately, very few agricultural households own bankable assets.0

For instance, only 0.1% of agricultural households own tractors, 0.2% own boats, 0.3% own platers and 1.5% own harvesters. Government programs have done little to increase ownership of critical assets essential to increasing productivity in Nigeria (see table 21).

18 https://dlca.logcluster.org/display/DLCA/2.3+Nigeria+Road+Network

19 https://openknowledge.worldbank.org/handle/10986/8108

20 https://efina.org.ng/wp-content/uploads/2021/10/A2F–2020–Final-Report.pdf

21 https://www.premiumtimesng.com/news/506666–anchor-borrowers-programme-over–4–8–million-farmers-financed-buhari.html

Table 21: Agriculture Asset (% of Agriculture households that own)

	Region						Sector		
Year	North Central	North East	North West	South East	South South	South West	Urban	Rural	Nigeria
Tractor	0.0	0.2	0.0	0.5	0.0	0.0	0.0	0.1	0.1
Plough	2.1	9.3	12.4	0.5	0.0	0.7	1.5	5.7	5.1
Trailer/Cart	0.0	0.7	2.2	0.0	0.1	0.0	0.1	0.8	0.7
Ridger	6.6	9.6	7.7	0.5	0.0	0.0	1.0	5.1	4.5
Planter	0.0	0.2	1.2	0.0	0.0	0.0	0.0	0.4	0.3
Pickup	0.1	0.2	0.7	0.3	0.0	0.2	0.0	0.4	0.3
Harverter	0.1	0.9	4.4	0.9	0.1	0.5	0.8	1.7	1.5
Water pump	1.3	2.2	5.7	0.4	0.1	4.0	1.4	2.7	2.5
Sprinkler	0.0	0.0	0.3	0.2	0.1	1.4	0.1	0.3	0.3
Sprayer	33.7	20.8	12.4	4.1	1.5	16.5	9.4	15.0	14.2
Outboard motor	0.0	0.1	0.1	0.0	0.2	0.0	0.0	0.1	0.1
Canoe	0.3	0.0	0.5	0.1	7.5	0.0	0.0	1.8	1.5
Boat	0.3	0.0	0.0	0.0	0.3	1.3	0.0	0.2	0.2
Fishing net	1.8	0.3	1.4	0.2	5.3	0.0	0.0	2.0	1.7
Wheelbarrow	18.0	18.0	14.6	52.9	26.1	9.9	23.2	23.4	23.3
Cutlass	97.5	74.7	84.1	97.0	96.0	95.9	87.8	90.8	90.4
Slckle	34.7	46.9	66.8	4.3	0.5	19.1	19.5	34.8	32.5

Source: Living Standards Measurement Study–Integrated Surveys on Agriculture, 2019

Violent conflict

Due to desertification and water depletion in the northern part of Nigeria, nomadic herdsmen are now shifting towards the country's south in search of grazing fields and water for their animals. This has resulted in violent conflict with crop farmers in the south.

Increased violence in the food-producing states is causing a decline in Nigeria's food production output. Farmer-herder violence has led to arsons and killings. A 2019 report by Foreign Affairs puts the death toll at 10,000 within a two-year period.

Poor Fiscal response

A joint study by the World Bank and the Federal Government of Nigeria[22] identified three main factors as standing out in this regard, among many other factors. These are the budgeting, procurement, and cash management processes. Available data indicate that for the fiscal year 2018, only 2% of the federal budget was allocated to the agriculture sector.

Similarly, an Agriculture Public Expenditure Review of the Federal Government conducted in 2013 (FG AgPER 2013) found that Nigeria commits less than 2% of total public spending to agriculture, far short of the 10% target in the

22 Federal Republic of Nigeria, 2012 Public Financial Management Performance Reports, Volume II: Public Investment Management (PIM) Efficiency Review

Maputo Declaration on Agriculture and Food Security[23], to which Nigeria is a signatory.

The report also concluded that capital expenditure fell far short of planned spending due to shortfalls in releases and the inability to utilise released funds, while the quality of overhead spending remained poor from 2008 to 2012.

Poor implementation of the capital budget for agriculture (like other sectors) manifests as gaps between the approved capital budget and total release warrants, release warrants and cash backing, and cash backing and utilisation by budget implementing agencies.

The shortfall of cash backing from the approved budget is the real funding gap – the extent to which the government does not fund the budget.

Insufficient climate financing

Although more detailed analysis still needs to be done around this theme, it is widely accepted that Nigeria's governments are not prioritising allocating sufficient budgetary resources to mitigate the direct and indirect effects of climate change.

The effects of global warming and climate change have led to increased earth temperature, desertification, droughts, floods, and sea-level rise, among others. They have impacted negatively on agriculture and the right to food. All these are inter alia traceable to the increasing emission of carbon dioxide and other greenhouse gases (GHG) into the atmosphere[24].

Worsening climatic conditions in Nigeria are contributing to strain on already limited resources, increasing the risk of crashes and disputes over natural resources such as land and water. Insecurity prevents women in communities from plying petty trades or farming – contributing to a culture of dependency.

Access to irrigation is low

In Nigeria, only 2.2percent of farming households cultivate on irrigated land. Farmers depend solely on rainfall. The distribution and allocation of the other prime lands that are already under irrigation or have huge potentials for irrigation are somewhat biased against Smallholder farmers.

Most of the lands beside rivers and the flood plains, suitable for all-round season cultivation, are often not accessible to Smallholder farmers due to the distance of farms from the household and competition for lands.

Interestingly, 57% of Nigeria's Landmass is either semi-arid, dry sub-humid or sub-humid[25]. Smallholder women farmers are left to cultivate on the worst lands. Small-scale irrigation has thus become desirable by Smallholder women farmers.

Small-scale irrigation is long-established using open water sources and shallow groundwater to guarantee continuous farmers and boost productivity. Such indigenous irrigation has

23 At the Second Ordinary Assembly of the African Union in July 2003 in Maputo, African Heads of State and Government endorsed the "Maputo Declaration on Agriculture and Food Security in Africa" (Assembly/AU/Decl. 7(II)). The Declaration contained several important agricultural decisions, but prominent among them was the "commitment to the allocation of at least 10% of national budgetary resources to agriculture and rural development policy implementation within five years".

24 Agriculture Sector Medium Term Sector Strategies (MTSS) 2018–2020, a Memorandum from Civil Society Organisations (CSOs) Working in the Agriculture Sector, prepared by Centre for Social Justice (CSJ), with support from Heinrich Boell Foundation (HBF) Nigeria

25 https://academicjournals.org/journal/JENE/article-full-text/FBCBC6955306

greatly expanded by introducing small petrol and solar-powered water pumps.

This new technology has allowed substantial increases in dry-season agricultural production. However, access to this technology is uneven, and there are potentially severe problems with pump maintenance, the cost of the pump and issues around land tenure, which may limit the long-term impact of this irrigation technology.

Table 22: Irrigation

Region	% of households cultivating on irrigated land
North Central	1.3
North East	1.1
North West	5.6
South East	1.1
South South	0.8
South West	0.6
Urban	0.6
Rural	2.4
Nigeria	2.2
Male-Headed Households	2.4
Female-headed Households	1.1

Source: Living Standards Measurement Study–Integrated Surveys on Agriculture, 2019Improve Access to Credit

3.0 Recommendations

Improve Access to Credit

The share of commercial banks' loans to agriculture has increased recently from the 2016 level of 3.26% to 5.15% in 2020; however, given that the sector account for 30.6% of Jobs in Nigeria and about 26.84% of economic activities, Nigeria must realign Fiscal and Monetary policy to ensure access to credit improves significantly.

Credit facilities aimed at increasing agriculture assets may be desirable compared to loans targeted at banking operations. The fiscal and monetary authority's policy toolkit should be realigned to improve the number of agricultural households that own collateral assets like Tractors, Trailer/carts, planters, harvesters, fishing boats, and pickup trucks, among others.

Realign policies to promote exports while reducing food inflation

In Nigeria, about 51.12% of loans advanced to farmers under the Agricultural Credit Guarantee Scheme Fund are directed at improving food crops productivity (grains, root and tuber, beans and soybeans and vegetables).

In 2020, 43% of loans advanced to farmers under the food crop sub-sector are directed at boosting grain production. Loans that boost the productivity of cash crops like oil palm, rubber, cotton, groundnut and ginger under the Agricultural Credit Guarantee Scheme Fund remain below the desirable level.

In 2020, the total outstanding loan directed at cash crop under the ACGSF scheme was only N425.93 million, down from 2014 level of N482.56 million.

Also, the share of agriculture in Nigeria's total export earnings remains small compared to imports. For instance, Nigeria spent N1.97 trillion importing foods and agriculture products in 2021 compared to only N504 89 billion in export earnings.

Cocoa, Sesame and cashew nuts account for more than half of Nigeria's agricultural exports. In 2016 and 2017, agriculture export as a percentage of total export was 0.71% and 1.25%, respectively.

Hence, macroeconomic policies must be pursued in a consistent manner to reduce food inflation, reduce variability in agricultural product prices, reduce importation and, more importantly, boost export earnings. Nigeria has a comparative advantage in producing several exportable agricultural commodities, including cocoa, palm, ginger, spices, cassava, hides and skin, cashew and gum Arabic.

Increase access to improved seeds

Agriculture productivity remains low primarily because only 10.1% of agricultural households use improved seeds in Nigeria. Fiscal authorities must introduce policies and fiscal action to replace old seed stocks with improved seeds.

That initiative alone could potentially double Nigeria's agricultural output and crop yield in the near to medium term. Fiscal interventions aimed at increasing the usage of Herbicides and Pesticides among farming households because of cultural and financial blockage will be needed in the near term.

Improve fertiliser usage

Depletion of soil nutrients also contribute to low crop yield. The Food and Agricultural Organisation (FAO) reports on fertiliser use intensity among Nigerian farmers reveal that at about 13 kg/ha, the fertiliser use rate among farmers in Nigeria was far below the 200 kg/ha recommended by FAO for the sub-Saharan African countries.

Only 64.6% of agricultural households use fertiliser in Nigeria. Policy intervention should be directed at increasing the fertiliser use rate among households already using fertiliser (either organic or inorganic).

Leverage technology and community radio to expand extension services

In Nigeria, only 20.7% of farming households receive extension services. The majority of Smallholder farmers often complain about the lack of adequate knowledge about climate resilience farming and other modern agronomy practices.

The government may leverage community radio and other technology to expand extension services widely across the country.

Investment in rural roads and rail tracks is needed

In Nigeria, 60%[26] rural roads are mostly not motorable. Fiscal authorities may have to create dedicated funds and institute a robust public work system in collaboration with local and state governments to quickly improve access to farming communities. Aside from roads and rail, policy intervention should also improve electricity, water, communication and other social infrastructure.

Leverage technological breakthroughs to Increase land under irrigation

Interventions should address the negligible level of irrigation facilities in the country. Nigeria will need to improve household cultivation on irrigated land from the abysmal level of 2.2percent in the near term. Several technologies have been developed to reduce water usage for farming.

For instance, Precision land-levelling uses laser-guided equipment to level the field so that water will flow uniformly into the soil, not run down any little hills or collect in little gullies. Policy intervention must be directed at leveraging those technologies to improve land under irrigation and improve crop yield.

Address Insecurity and Violent conflict

Policy intervention should address violent conflict and insecurity. A robust strategy will need to be instituted and implemented in the near term to address terrorism, cattle rustling, banditry, and herders/farmers' conflicts affecting farming activities.

Community and state police systems are becoming desirable in the near term to address the challenges which have negatively impacted farming activities in Nigeria.

26 https://dlca.logcluster.org/display/DLCA/2.3+Nigeria+Road+Network

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