

POLICY BRIEF

TRANSFORMATIVE STRATEGIES FOR NIGERIAN AGRICULTURE

Key Findings from the Fertilizer Use by Crop Study (FUBC) 2023

OBJECTIVES OF FUBC

AfricaFertilizer (formerly AfricaFertilizer.Org [AFO]), an initiative of the International Fertilizer Development Center (IFDC), has been collecting, analyzing, and disseminating relevant fertilizer information for sub-Saharan Africa (SSA) since 2009 for policy and business decisions. AfricaFertilizer has been at the forefront of providing market intelligence through providing fertilizer trade data (import/exports), fertilizer production data, validation workshops through Fertilizer Technical Working Groups (FTGWs), Fertilizer Use by Crop (FUBC) studies, publications, partner meetings, and more.

Through a series of strategic interventions, AfricaFertilizer has successfully championed the implementation of empirically driven policies across nations in SSA. Notable initiatives include subsidy review studies in Kenya, an assessment

of the Presidential Fertilizer Initiative (PFI) in Nigeria, the development of fertilizer procurement guidelines in Ethiopia, and active participation in The African Union Commission's (AUC) Comprehensive African Agricultural Development Programme (CAADP) process. These endeavors underscore AfricaFertilizer's commitment to fostering evidence-based decision-making to advance sustainable agricultural practices in the region.

THE EFFORT

In 2018, AfricaFertilizer, Development Gateway (DG), an IREX Venture, and Wallace and Associates (W&A), through a Bill & Melinda Gates- funded program dubbed Visualizing Insights on Fertilizer for African Agriculture (VIFAA) collaborated to develop a more visualized approach to disseminating the data housed under AfricaFertilizer. The collaboration (jointly referred to as VIFAA Partners), has since simplified access to the "big data" for policy makers and investors in further growing the fertilizer markets in Africa through use of country dashboards.

Another key component of the VIFAA program has been to identify real consumption of fertilizers at the national level. Over the years, AfricaFertilizer has been receiving financial support from the International Fertilizer Association (IFA) in developing FUBC studies for several African countries, including Burkina Faso, Cote d'Ivoire, Ethiopia, Ghana, Kenya, Mali, Nigeria, Senegal, Tanzania, Zambia, and Zimbabwe.



The FUBC studies meet several objectives:

1. To determine fertilizer consumption by type, per crop at national and regional levels
2. To determine nutrient usage at national and regional levels.
 - a. Understanding these components provides essential consumption analysis and demand projections. The study forms the basis of more scientific research into a country's fertilizer consumption pattern while providing the impact of nutrient-related policies, assessing the potential risks associated with nutrient use inefficiencies and soil nutrient mining.
 - b. The studies highlight the issues around fertilizer usage; provide details on agricultural land use, cropped areas, existing farming systems, agricultural productivity, fertilizer supply chain and distribution framework, real fertilizer consumption per crop, and the economics of fertilizer usage; and offers recommendations on corrective action for the above issues.

BENEFICIARIES

Beneficiaries of the FUBC studies include:

- **Public sector:** Monitor agricultural productivity; monitor achievement of Abuja/Malabo declarations (i.e. 50 kg/ha of nutrient use); research on nutrient recommendation (by crop and region); develop fertilizer policies (availing the appropriate fertilizers in the market through subsidy or regulations); which crop value chains to strengthen, etc.
- **Private sector:** Monitor demand and supply; provide gap analysis of appropriate fertilizers; analyze investment in soil and crop nutrient uptake and installation of processing facilities, etc.
- **Development partners:** Efforts with development partners center on crafting effective projects grounded in data-backed analyses of a country's fertilizer value chain. By leveraging comprehensive insights through FUBC studies, the approach ensures project design is informed by accurate information and tailored to address specific challenges and opportunities within the local fertilizer sector.

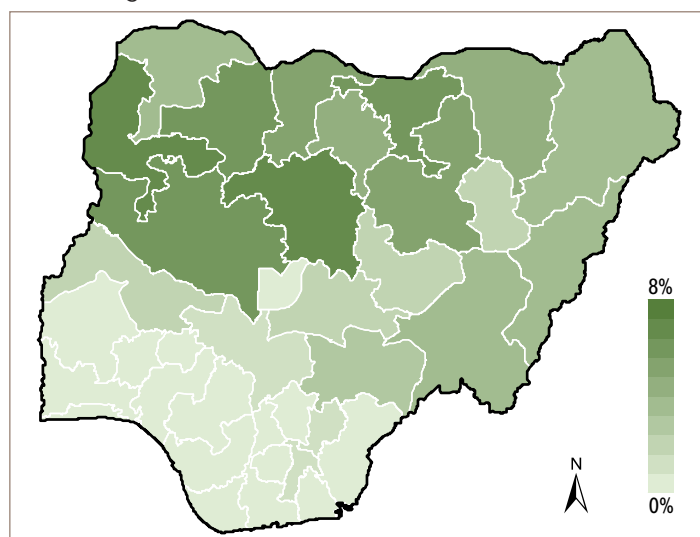
METHODOLOGY

Through the FUBC approach, the VIFAA partners collaborated with the Nigerian private sector to commission a study in 2023 that would be incorporated into the recommendations to the PFI in Nigeria. The design of the study involved a seven-step process as summarized below.

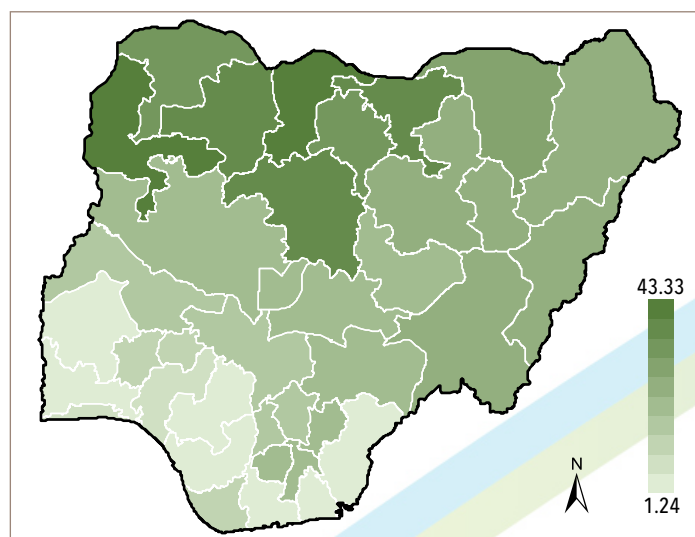
1. Documentation of all variables/indicators for FUBC computation, e.g. major consuming crops, fertilizer products available, planted area, etc.
2. Assessment of data availability/quality (tiered from unavailable to available).
3. Design of a conceptual framework for data flows/indicators to be measured (allowing for analysis and verification).
4. SWOT analysis on the data sources.
5. Data collection.
6. Computation of data on consumption per product.
7. Computation of data on consumption per nutrient.



▼ **Figure 1.** Fertilizer consumption (kg/ha) profile per state, Nigeria



▼ **Figure 2.** Fertilizer use (kg/ha) profile per state, Nigeria

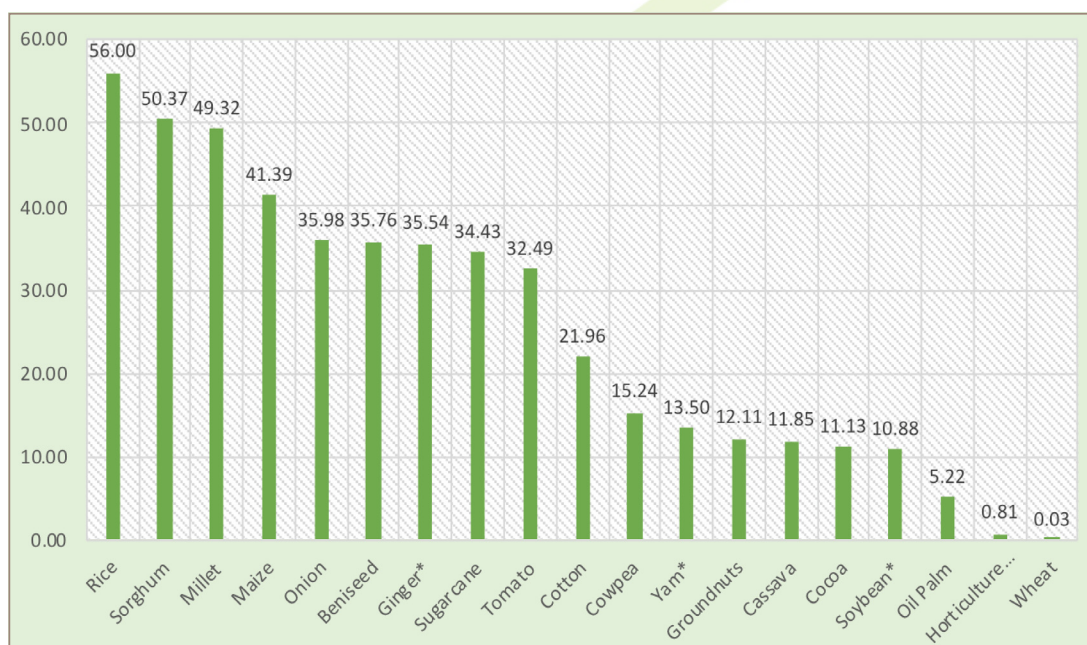


RESULTS

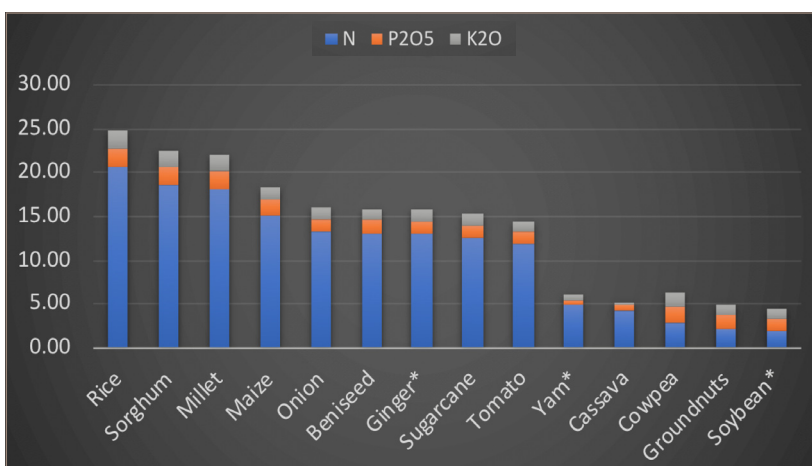
Several key findings emerged from the Nigeria study¹:

1. Kebbi State leads in consumption at 8.4% of the national average.
2. No states in Nigeria are meeting the Abuja/Malabo target of 50 kg/ha of nutrient tons. Only Kebbi, Kaduna, Zamfara, Katsina, Kano and Jigawa are close to meeting this target, with between 40-43 kg/ha on cropped land. See **Figures 1** and **2**.
3. As demonstrated by **Figures 3** and **4**, sorghum, maize, rice, and millet are the biggest consumers of fertilizers in the country.
4. Investments into these value chains has paid dividends in incentivizing fertilizer consumption.

▼ **Figure 3.** Consumption of key crops by product (kg/ha) in Nigeria



▼ **Figure 4.** Consumption of key crops by nutrient (kg/ha) in Nigeria



¹ Final report



NEXT STEPS

1. Fertilizer demand has been historically influenced by the government to the detriment of smallholder farmers. There is a need for a change in attitude of the key stakeholders, starting from the government, to recognize farmer profitability as stakeholders to improve farmer profitability.
2. With its principal crops, Nigeria applies only 25% of the Abuja declaration nutrient target of 50 kg/ha. The poor nutrient consumption application contributes to low farmer yields and poor soil quality.
3. Nitrogen accounts for 80% of the nutrients applied. This is driven by the improvement in availability resulting from the investments in manufacturing.
4. Sorghum, maize, rice, and millet are the biggest consumers of fertilizers in the country. Investments in processing, especially for cereals appear to have contributed to transitioning the cereals from staples to semi-commercial crops. The investments create a predictable demand for a defined quality of products and enable the farmer (through a bundle of services, including credit) to fulfill that demand.
5. Input suppliers, however, seem to lag behind the commercial zeal of the farmer. The fertilizers offered do not correspond to the products required, and there is no concerted effort to team up with processors to explore further the growth potential of the crops.
6. Distribution does not seem to reflect the consumption patterns of the states. It is likely that the consumption patterns have shifted over the last decade. For example, the importance of Kebbi as a producer state has grown in the last seven years, but the distribution hubs have remained the same.
7. The traditional commercial crops (e.g., cocoa, cashew, sesame, ginger) do not appear to receive the attention of the supply chain. No blends have been developed to target these crops, and they are hardly fertilized.
8. The fertilizer application rates for important staples like yam and cassava are relatively poor.
9. Fertilizer products offered to farmers can be better adapted to the geographic area and the crop. While it is important to embark on soil studies to understand the soil to adapt the fertilizer, the current information available could be used to develop best-bet blends that are more effective and less costly (more optimal nutrient content) for the farmer.
10. Many farming areas that produce root and tuber crops do not appear to be served by the private sector.
11. The soil maps that currently exist do not justify the blanket use of fertilizers across the country.

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