AfricaFertilizer
Data-Driven Decisions for African Food Systems

IFDC

# TECHNICAL REPORT

## Fertilizer Technical Working Groups 2022 Fertilizer Statistics Validation Workshop Nigeria


**March 29 – 30, 2023, Lagos - Nigeria**

DEVELOPMENT GATEWAY
An IREX Venture

CountrySTAT
Food and agriculture data network

Wallace & Associates

# LOGOS OF KEY PARTNERS






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| | |
|---|---|
| **AFAP** | African Fertilizer and Agribusiness Partnership |
| **AF** | AfricaFertilizer |
| **DAP** | Diammonium Phosphate |
| **DG** | Development Gateway |
| **ECOWAS** | Economic Community of West African States |
| **FEPSAN** | Fertilizer Producers and Suppliers Association of Nigeria |
| **FISS** | Farm Input Support Service |
| **FMARD** | Federal Ministry of Agriculture and Rural Development |
| **FTWG** | Fertilizer Technical Working Groups |
| **FUBC** | Fertilizer Use by Crop |
| **GAS** | Granular Ammonium Sulphate |
| **ICT** | Information and Communication Technology |
| **IFA** | International Fertilizer Association |
| **IFDC** | International Fertilizer Development Center |
| **MOP** | Muriate of Potash |
| **NBS** | Nigeria Bureau of Statistics |
| **NCS** | Nigeria Customs Service |
| **NGO** | Non-Governmental Organization |
| **NPA** | Nigeria Port Authority |
| **NPK** | Nitrogen Phosphorus Potassium |
| **NSIA** | Nigerian Sovereign Investment Authority |
| **PFI** | Presidential Fertilizer Initiative |
| **PPP** | Public- Private Partnership |
| **SWOT** | Strengths Weaknesses Opportunities Threats |
| **USAID** | United State Agency for International Development |
| **USD** | United State Dollar |
| **VIFAA** | Visualizing Insights on Fertilizer for African Agriculture |
| **WAFA** | West Africa Fertilizer Association |

## 1.0 Background

The International Fertilizer Development Center (IFDC), through the AfricaFertilizer (AF) initiative, has been working with the CountrySTAT program of the Food and Agriculture Organization of the United Nations, over the past ten years, to collate, analyze, validate, and disseminate reliable and up-to-date official statistics on fertilizers produced, imported, exported, and consumed in countries within the West Africa Sub-region.

In 2012, Fertilizer Technical Working Groups (FTWG) was established in 11 sub-Sahara African countries, including Nigeria and currently covers about 18 countries. These working groups have been responsible for reviewing country-level data and presenting statistical results tables for validation by the National Technical Working Groups before such data is published.

The partnership between AF, the West African Fertilizer Association (WAFA), and CountrySTAT aims to improve the quality and availability of fertilizer data in terms of production, trade and consumption to enable decision-makers to have and use reliable fertilizer data for formulation and monitoring of agricultural development policies, strategies on food security, promotion of trade within the West Africa region and beyond, as well as updating stakeholders, on an annual basis at a stakeholders workshop.

### 1.1 The objectives of the 2023 workshop include:

- Present, review, process, and validate detailed 2022 statistical data on production, imports,exports, and apparent and actual fertilizer consumption for Nigeria.
- Update 2010 - 2021 series of statistics with the 2022 data.
- Demonstrate the AF website.
- Discuss the methodology for the Fertilizer Use by Crop (FUBC) studies.
- Provide updates on Nigeria's private sector activities and plans for 2023.
- Update participants on current fertilizer programs and initiatives.

### 1.2 Workshop Sponsorship and Data Granularity for the Private Sector

Starting in 2013, AF began to collect fertilizer import and export data in Nigeria. At the time, fertilizer data were not available in a usable format for various reasons. Over time, AF built a mutual relationship with the public and private sector to become a reliable source of “on the ground” data on fertilizer and make the data readily available to all stakeholders.

Nigeria’s fertilizer market is growing and so are the information needs to access critical data to better understand and respond to the market. The private sector companies expressed a need to balance the funding from a donor perspective to address the needs and interests more closely from the private sector.

AF has partnered with the private sector fertilizer players in Nigeria to initiate collection of key datasets. This is through a subscription model which includes engagements to refine

future data requirements, data protocols, and subscription options for 2023 and beyond. Since 2022,the subscribers have been getting the following datasets on exclusive or pre-release basis:

- Nigeria Situation Statement
- Annual FTWG
- NPK Nigeria Data Collection
- FUBC Analysis
- Retail Price Data Collection
- Cost Build-Up Collection and Analysis

The subscription model has targeted eight key stakeholders in the Nigeria fertilizer sector with commitments received from a good number of them.

Some of the key stakeholders and projects who played a crucial role in supporting the FTWG for 2023 include.

- HortiNigeria Project.
- OCP Africa.
- Golden Fertilizer.
- Dangote Fertilizer Limited.
- Fertilizer Producers and Suppliers Association of Nigeria (FEPSAN).
- Indorama Eleme Fertilizer Company.

## 1.3 Summary Table of Participants

*Table 1: Participants at the workshop*

| Public Sector | Private sector | IFDC | DG | Country STAT | Male | Famale | Total |
|---|---|---|---|---|---|---|---|
| 5 | 20 | 16 | 2 | - | 36 | 7 | 43 |

## 1.4 Methodology

The methodology of the workshop included presentation of goodwill messages from IFDC, Federal Ministry of Agriculture & Rural Development (FMARD), WAFA, Nigeria Bureau of Statistics (NBS) and Development Gateway (DG). There were presentations from AF, WAFA, FEPSAN, HortiNigeria, the Nigeria Sovereign Investment Authority (NSIA), FMARD, the private sector, and DG which conducted a survey. There were plenary work sessions to update and validate available fertilizer data for Nigeria. Earlier before the time of the workshop, import, export, and NPK production data from Customs, Nigerian Ports Authority (NPA), and the private sector were compiled and processed by AF Nigeria team, and a pre-validation exercise was carried out before the main validation meeting. During the plenary session, the data processed and pre-validated were presented to participants of the 2023 FTWG meeting to validate as2022 fertilizer statistics for Nigeria. Discussions followed after which the data was validated.

To arrive at the apparent consumption data, the formula adopted in the previous years was used in addition to the carryover stock from 2021 (Apparent Consumption = Carryover stock 2021 + Production + Imports - Exports - Non-Agricultural Use of Fertilizer- Carryover Stock for 2022). Afterarriving at the apparent consumption data, it was agreed by the FTWG team as the apparent consumption data for year 2022.

There were also group discussions, questions/answers at plenary sessions.

### 1.5 Welcome Remarks

Immediately after participants introduced themselves, representatives of IFDC, FMARD, the Nigeria Bureau of Statistics (NBS), DG and WAFA delivered their welcome remarks.

### Remarks by IFDC Nigeria Country Director

Beginning his remarks, Mr. Yusuf Dramani, welcomed and thanked all participants for honoring the invitation to participate in the 2023 meeting to validate fertilizer data that are critical for the development of agriculture in Nigeria. He lauded the partnership between IFDC, WAFA, and other partners who use the FTWG platform and its associated activities to promote quality fertilizer data and drive food security.

*Picture 1: Remarks from IFDC Country Director.*

## Remarks by FMARD Representative

When it was his turn, Mallam Adamu Sale, the Deputy Director of Farm Input Support Service (FISS) of the Federal Ministry of Agriculture and Rural Development (FMARD) welcomed participants, on behalf of the Director of FISS to meeting. He confirmed the importance and usefulness of the data generated at FTWG meetings to the Ministry and other key fertilizer sector actors in Nigeria. Before ending his remarks, he encouraged participant to actively involve themselves in discussions for successful outcomes that will benefit all stakeholders, especially Nigerian farmers.

*Picture 2: Remarks from FISS/FMARD Deputy Director.*


## Remarks by NBS Representative

Mr. Babalola Ayodele David, Director at NBS welcomed participants and informed them about how the Statistician General is always appreciative of the efforts of individuals and groups who contributesto statistics, most especially IFDC and other organizations that are collaborating in sponsoring the FTWG program, as well as private agencies which are providing the required data to be validated, so that at the end we have data that are acceptable by all.

*Picture 3: Remarks from NBS Director.*

## Remarks by DG Representative

One key point Seember Ali, the Country Program Manager for DG in Nigeria, made was the importance of the FTWG meeting which is one of the most important outputs that DGlooks forward to every year, because of the data that are needed to feed into the Nigeria dashboard, which stakeholders helped to create three years ago, and which is now a distinct feature in AfricaFertilizer's work and website.

*Picture 4: Remarks from VIFAA Nigeria Coordinator.*


## Comments by WAFA Representative

Dr. Innocent Okuku, the Executive Secretary of WAFA, emphasized the strategic role FTWGs play in the operations of WAFA and its members, in terms of improving fertilizer availability and use across the sub-region, because of the quality data generated at such meetings. He promised to get WAFA more actively involved in all such workshops. He encouraged all private sector players to be open-minded as much as possible regarding data without which the private sector will be handicapped.

*Picture 5: Remarks from WAFA Executive Secretary.*

## Workshop Agenda

Fred Gyasi, the Deputy Program Manager of AF started the program by taking the participants through the program of the day and the objectives of the workshop and encouraged participants to take active interest in the meeting, especially the data validation process.

## Day One (Mar 29, 2023)

There were five major presentations made on the first day of the workshop. They include the following:

- Update on AfricaFertilizer by Sebastian Nduva.
- Presentation of 2021 fertilizer trade statistics overview by Samuel Ali.
- Presentation of country data availability, methodology, and process by Fred Gyasi.
- Group Work: Presentation and validation of 2022 import and export data led by Fred Gyasi.
- Presentation on the FUBC methodology and process by Ayodele Balogun.

**Presentation 1**:
AfricaFertilizer at a glance

### 2.1 Overview of AfricaFertilizer by Sebastian Nduva

In his presentation, Sebastian Nduva the Program Manager of AfricaFertilizer informed participants abut AF's rebranding and launch of a revamped website to meet the needs of key stakeholders.

He reminded the meeting about how far AF has come since inception in 2010 and its working partnerships with IFA, Development gateway, Argus and USAID while also getting support from the Nigeria private sector to get some of the Nigeria deliverables.

He reminded participants about AF's role as the provider of reliable, high-quality, unbiased data and information on fertilizer and soil fertility issues in Africa, with its core areas of fertilizer statistics, fertilizer production, trade, and consumption data by product/nutrient tons for subSaharan Africa countries, collection of fertilizer retail prices (but at the State level in Nigeria), and FUBC analysis. AF has plant directories, monitoring tools like the Africa Fertilizer Watch,and industry-specific consultancies and market entry survey studies for investors looking to come into Africa.

He stressed the need for AF to understand how the fertilizer market is evolving in Nigeria, especially the NPK market for which reason AF would convene an NPK technical group meeting in quarter 3 of this year to enable AF to track raw materials, blended products, and distribution to end users.

In conclusion, he mentioned some of the opportunities available to Nigeria in 2023 including industry players looking into the region to establish trade routes from the Black Sea/Baltics, normalization of trade channels, surplus fertilizer (Urea) trade to sub-Sahara and the ECOWAS region, getting involved in the Africa Fertilizer and Soil Health Summit, growing the bespoke formulations market, and growing the raw material market with 70+ blender, among others.

*Picture 3: Sebastian Nduva making a presentation on AFO overview.*

**Presentation 2**:
Nigeria fertilizer statistics
2017 - 2021

### 2.2 Presentation of 2021 Fertilizer Trade Statistics Overview by Samuel Ali

Samuel Ali presented the fertilizer trade statistics from 2017 - 2021. In his opinion, it would have been good to look at real consumption instead of apparent consumption, but the process of arriving at that, according to him, is quite complicated to put together.Because of that, we are still at the level of looking at apparent consumption. which indicates fertilizer consumption in terms of import, export, and production.

### Highlights of his presentations

- There is primary production of granulated Urea fertilizer in Nigeria by Notore Chemical Industries PLC, Indorama Fertilizers & Chemical, both located at Onne, River State and Dangote Fertilizer Limited located in Lagos.
- There was an 88% increase in Urea production in 2021 compared to 2020.
- Notore took over from NAFCON in 2005 and started production of Urea. Indorama's train 1 started production in June 2016 while train 2 started production in 2021. Dangote's train 1 also started production in 2021 and commenced train 2 production in 2022. This explains the increment in Urea production in 2021.
- There is also production of SSP, but it has been on hold since 2016.
- The number of companies that participated in the fertilizer blending program increased from 31 in 2020 to 52 in 2021.
- Official fertilizer imports to Nigeria increased by 65% from 2020 to 2021.
- There was a restriction on forex, on fertilizers, and a ban on imported NPK 15-15-15 in Nigeria from Q4 of 2018, which affected imports in 2019. Nigeria is now importing raw materials to sustain the local NPK industry.

- There was a restructuring in the modalities of the Presidential Fertilizer Initiative (FPI) in 2020, from the allocation processto demand-driven based on the capacities (finance, ability to blend) of fertilizer companies.
- There was a restriction on importation of Urea from 2016 which accounts for the drop or nonexistence of Urea imports from 2017. Urea producers in the country currently produce more than is consumed locally.
- In 2021, most of the DAP, Ammonium Sulphate and MOP fertilizers imported were recorded in the second quarter, with 71% of them being imported in the first half of the year.
- Due to the import ban in 2018, NPK importation reduced from 2019.
- Increase in production capacities and volumes in 2021 saw Urea exports increase by 202% from2020 and Brazil has continued to be the exports destination for Nigerian Urea as 79% of the Urea was exported there in 2020 and 87% in 2021.
- There was a 31% increase in apparent consumption from 2020 to 2021. The apparent consumption in 2021 was 1,859,306 MT after a carryover of 199,971 MT from 2021 into 2022was subtracted.

*Picture 4: Samuel Ali presentation Nigeria fertilizer trade statistics overview.*

**Presentation 3**: Data processing and methodology

## 2.3 Presentation of Country Data: Availability, Methodology, and Process, by Fred Gyasi

Fred Gyasi the Deputy Program Manager of AfricaFertilizer, presented the Nigeria country data showing the method used in the data collection and processes. He stated that the primary purpose of the fertilizer data processing, cleansing, and validation activities is to measure and understand

the real quantities of fertilizer that our farmers use (consume) for agriculture. But there are challenges and complexities in gathering all the required data to measure the actual consumption of fertilizer by end users, but this can be overcome through FUBC studies. Although, giventhese constraints, we can rely on available fertilizer trade, production, and non-agricultural usage data to estimate the apparent consumption of fertilizer by farmers in the country.

According to him, apparent consumption is calculated as using production + import – export – non fertilizer use of import. Also, carryover stocks for the year, can be subtracted to get a closer figure to the reality. Therefore, it would be calculated as production + import – export – non fertilizer use of import – carryover stock for that year.

He indicated that relying on trade data also provides fertilizer market information regarding the fertilizer types that have been imported, the countries from which they are imported, and when they are available in the country. This information helps the validation process to generate overviews and factsheets, as well as summary tables for the AF dashboard, WAFA, IFA, public and private sector actors.
He mentioned some key information needed from the raw material data from customs and NPA which includes HS Codes, Volumes (Net Weight) and Values (USD), detail product description, Name of Importer and Origin/Destinations, Port/Border of Entries Dates (Day, Month and Year).

He presented four categories of fertilizer in use, which are **Fertilizers** (Primary nutrients, products that can be applied to give nutrients to crops, imported by fertilizer companies, and contain one or more of the primary nutrients; N, P2O5 and K2O); **Industrial** (Products that can be applied to give nutrients to crops but are imported by other companies in mining, pharmaceutical, textiles, construction, etc. for other industrial purpose); **Enhancers** (Products that provide the soil with secondary and micronutrients, water absorbers, etc. to promote healthy plant growth but not the three essential primary nutrients; N, P2O5 and K2O); and **None fertilizers** (Products that cannot be used to produce fertilizers, which are mostly captured wrongly under fertilizer HS codes.

*Picture 5: Fred Gyasi presentation on data processing and methodology.*

### 2.4 Group Work: Presentation and validation of 2022 import and export data

Fred Gyasi and Clement Donkor-Boateng led the group session to present and validate import and export data with valuable input from all participants.

#### Discussion

- Data sources from other African countries could be used to account for smuggling which is not captured by Customs. Going forward to have a more accurate data, it was suggestedthat we use data from those countries during the pre-validation exercise to give more accuracy to Nigeria's data.
- Customs suggested capturing informal trade figures e.g. seizure of goods in their data to havea more holistic and realistic outcome from the validation exercise.
- There is the need to include limestone (filler) figures in the validation process going forward, because limestone companies are increasing in numbers, as it is also an important part of NPK blends, and accounts for 26% of production.
- FEPSAN has capacity to track filler usage among blenders.
- All raw materials to produce NPK are imported through NSIA under the PFI program, but there is importation of Granular Ammonium Sulphate (GAS) by AS Baba and Plantmate from China in containers, although not in significant high quantity to affect apparent consumption.
- Stakeholders support the role of NSIA in sourcing raw materials to produce NPK as it makes it easier to track records of these products.
- There is a need to import more products into the country to dilute the soaring prices currently experienced at the retail level to enable farmers to get these products at affordable prices.
- There was decrease in imports due to the Russia-Ukraine crises, so Nigeria could not import the large quantities of MOP required from Russia which they later sourced fromCanada.
- The delay in the importation of raw materials for blending resulted in the late arrival of fertilizers in the market, reducing offtake by farmers. Higher prices also reduced farmers' purchase of fertilizers.
- As a result of initial fertilizer raw material scarcity, blenders were putting together various formulations with the few available raw materials in the system which reduced their dependency on the expected raw materials from NSIA.
- From Customs documents, there were land exports of Urea, NPK, and MOP to neighboring countries.

### 2.5 Results of 2022 fertilizer statistics review and validation

#### Fertilizer Production

There is primary production of granulated Urea fertilizer in Nigeria by Notore Chemical Industries PLC, Indorama Eleme Fertilizers & Chemical, both located at Onne, River State, and Dangote Fertilizer Limited located in Lagos. Urea production increased due to Dangote's train 2 which started production in 2022, in addition to Indorama's plant. Urea production increased from 2,701,279 MT in 2021 to 3,458,740 MT in 2022 indicating a 28% increase. Indorama's train1

started production in June 2016 while train 2 started production in 2021. Dangote's train1 started production in 2021 and commenced train 2 in 2022. This explains the significant increment in Urea production in 2022. Production of SSP has been on hold since 2016.Currently all the SSP used in the country are imported.

*Table 2: Urea production volumes, 2018 – 2022.*

| HS Code | Product | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|
| 3102100000 | Urea | 1,595,935 | 1,473,858 | 1,435,193 | 2,701,279 | 3,458,740 |

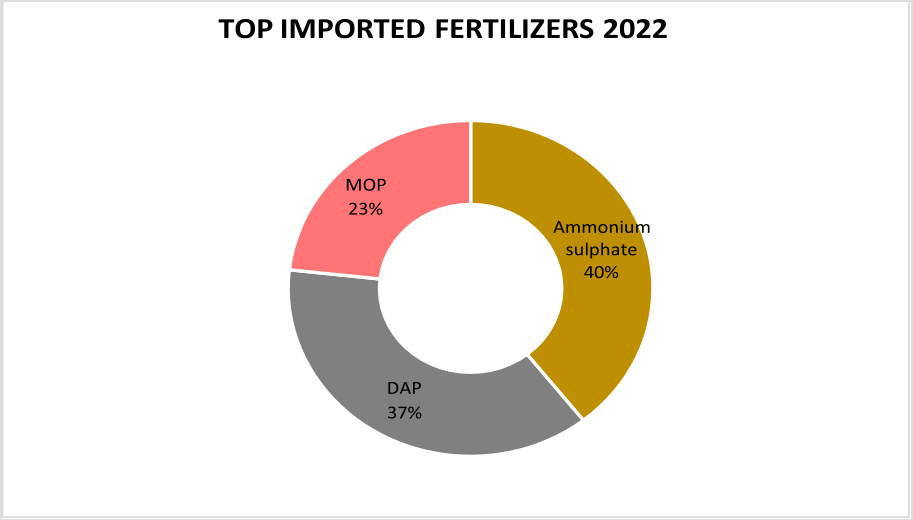
## Fertilizer Imports

Official fertilizer imports to Nigeria decreased due to the Russia-Ukraine crises, therefore Nigeria could not import the large quantities of MOP required from Russia, which was later sourcedfrom Canada. The volume of fertilizer raw materials imported for the year 2022 is recorded as follows; GAS 187,297 MT, DAP 177,776 MT, MOP 110,476 MT and others are 111 MT bringing the total fertilizer import to 475,661 MT, indicating a 33% decrease from 2021 imports. The restriction on forex for fertilizers and a ban on imported finished NPK products into Nigeria since Q4 of 2018has affected the importation of NPK from 2019. Nigeria is now importing raw materials to enablethe local NPK industry to blend products. There was also restriction on the importation of Urea since 2016 which accounts for the nonexistence of Urea imports from 2017. Urea producers in thecountry currently produce more than is consumed locally.

*Table 3: Fertilizer imports in Nigeria 2018 – 2022.*

| HS Code | Fertilizer Name | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|
| 3102210000 | Ammonium sulphate | 17,700 | 41,533 | 49,056 | 237,869 | 187,297 |
| 3105300000 | DAP | 92,956 | 56,800 | 168,181 | 292,158 | 177,776 |
| 3104200000 | MOP | 95,373 | 29,275 | 199,733 | 176,291 | 110,476 |
| | Others fertilizers | 48,101 | 2,064 | 11,316 | 576 | 111 |
| 3105200000 | NPK | 351,821 | 1,785 | 1,016 | 27 | |
| 3105510000 | NP compounds | 111,500 | - | - | - | |
| 3102100000 | Urea | - | - | - | - | |
| **Total (mt)** | | **717,450** | **131,458** | **429,303** | **706,922** | **475,661** |

*Figure 1: Chart of top 2022 fertilizer imports in Nigeria*




## Fertilizer Exports

Increase in production capacities, volumes, and lucrative international prices, saw Urea fertilizer exports significantly increase in 2022. Exports increased from 1,348,924 MT in 2021 to 2,540,523 MT in 2022; an 88% increase in exports. MOP and NPK were captured among export volumes for 2022 and these exports were through land borders.

*Table 4: Fertilizer export volumes, 2018 – 2022.*

| HS Code | Fertilizer Name | 2018 | 2019 | 2020 | 2021 | 2022 |
|---|---|---|---|---|---|---|
| 3102100000 | Urea | 837,436 | 743,707 | 446,850 | 1,348,924 | 2,522,113 |
| 3104200000 | MOP | | | | | 12,400 |
| 3105200000 | NPK | | | | | 6,010 |

## Fertilizer Apparent Consumption

The statistics summary for Nigeria showed that, there was a 30% decrease in apparent consumption in2022 compared to 2021. The apparent consumption in 2021 was 1,859,306 MT after a carryover of 199,971 MT from 2021 into 2022 was subtracted. While 301,353 MT of carryover stock was carried into 2023 which was not utilized in 2022 due to late importation of the raw materials used for blending. The late importation of MOP and the high price of fertilizer also resulted in lower demand, hence the decrease in apparent consumption.

*Table 5: Nigeria 2022 fertilizer statistics summary table.*

| New HS Code | Product Name | Carry over from 2021 to 2022 | Production | Total imports | Export | Industrial | Fertilizer Import | Carry over from 2022 to 2023 | 2022 Apparent Consumption |
|---|---|---|---|---|---|---|---|---|---|
| 3102100000 | Urea | 48,932 | 3,458,740 | | 2,522,113 | | | 29,579 | 955,980 |
| 3102210000 | Ammonium Sulphate | 55,024 | | 187,297 | | | 187,297 | 53,581 | 188,740 |
| 3105300000 | DAP | 62,570 | | 177,776 | | | 177,776 | 121,668 | 118,678 |
| 3104200000 | MOP | 33,445 | | 111,313 | 12,400 | 837 | 110,476 | 96,525 | 34,996 |
| 3101000000 | Organic Fertilizer | | | 84 | | 17 | 67 | | 67 |
| 2834210000 | Potasium Nitrate | | | 27 | | | 27 | | 27 |
| 9999999990 | Biostimulant, Micronutrients, Sample | | | 16 | | | 16 | | 16 |
| 3103900000 | Other phosphate | | | 0 | | | 0 | | 0 |

| | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| 2510100000 | Phosphate rock | | | 26 | | 26 | - | | - |
| 2814200000 | Ammonium hydroxide | | | 2,011 | | 2,011 | - | | - |
| 3102300000 | Ammonium nitrate | | | 34 | | 34 | - | | - |
| 3102500000 | Sodium nitrate | | | 1,247 | | 1,247 | - | | - |
| 3104300000 | Sulphate of Potash | | | 23 | | 23 | - | | - |
| 3104900000 | Other Potash fertilizer | | | 400 | | 400 | - | | - |
| 3105200000 | NPK | | | 1 | 6,010 | | 1 | | (6,009) |
| 3105400000 | MAP | | | | | | | | - |
| 3104900000 | Other potash fertilizer | | | | | | | | - |
| **2022 Total (mt)** | | **199,971** | **3,458,740** | **480,258** | **2,540,523** | **4,597** | **475,661** | **301,353** | **1,298,505** |

**Presentation 4**: Fertilizer used by Crop (FUBC)

## 2.6 Presentation of Nigeria's Fertilizer Use by Crop, by Ayo Balogun

Mr. Ayo Balogun made a presentation on FUBC and explained how to carry out FUBC studies, including the need to understand how much fertilizer is supplied, where the fertilizer is consumed and what type of fertilizer is being used and which crops are usingthis fertilizer. He emphasized the importance in knowing which nutrient goes into which crop. According to him, it is critical for decision makers to know how much of fertilization and its appropriateness is happening, because this information can be used to rebuildthe soil system and make farmers a lot more efficient with their production.

### Highlights of the Discussions

- To conduct FUBC study, it is important to know the fertilizer supplied, fertilizer use by type, and fertilizer use bynutrient at State level and not at regional level.
- Key elements needed for the FUBC study include total quantity of fertilizer used in the year under review, fertilizer quantity in each State, total crop area under cultivation, andin each State, crops cultivated, total area fertilized, percentage of crops fertilized, total quantity of fertilizer used by crops, and types of fertilizer used by crops.
- The distribution and consumption of fertilizer information that will be captured at each stage of distribution would include; manufacturers/blenders (how much they sell to each wholesaler and to each retailer), wholesalers (how much they sell to each retailer and to each community), retailers (how much they sell to each community) and farmers (what community do they belong, how much the use for each crop and how much land they farm).
- The distribution and consumption of fertilizer information required at each stage of the distribution will be obtained from the following organizations: manufacturers (Indorama and Dangote); blenders (FEPSAN/PFI); agrodealers (wholesalers, retailers); aggregators, (FISS, field staff and archives of different organizations, interviewing of people and from fertilizer and land use survey).
- The source to get this information would be the field staff of existing supply chain participants, while instruments that will be employed are the survey archives from different organizations and interviews.

- Available sources of data and information to be used for this study are the LSMS, PACE, QED, and farmers' data.
- Sampling perspectives from LSMS and NBS sources indicate that there are 43 million households out of which 47.25% are rural (from this percentage, 87% of the rural household are crop producers), so there are approximately 17.6 million household crop producers, and these are the focus and not the urban dwellers.
- The survey will focus on the 95% confidence level and +-2% error margin, therefore the target will cover 3,250 households.
- Looking at consumption patterns, the survey will focus on Northeast and Northwest and Northcentral which are the high/medium consumers and covers 20 States while two States (Ebonyi and Oyo) will be considered in Southeast, Southwest, and South south which are low consumers of fertilizer,

*Picture 9: Ayo Balogun making a presentation on FUBC.*

## 3.0 Day Two (March 30, 2023)

The second day began with a recap of day one activities by Felix Deyegbe the Communication Specialist for AfricaFertilizer. where he gave everyone the opportunity to speak on what stood out for them in the previous day's discussion. The following opinions were expressed by some of the participants.

- Export data from Customs and NPA were being crossmatched with those of the manufacturers to resolve the challenge with the data that had issues at the beginning of the validation.
- Issues related to units of measures for products imported into the country were being addressed during the validation.
- Data from land boarder export were captured in the Custom data which makes the validation process interesting as participants were looking forward to seeing data for land borders.
- Security apparatus should be sensitized on legalizing the framework around the distribution and movement of fertilizer to other neighboring countries through land borders.

*Picture 10: Felix Deyegbe doing a recap of Day 1 activities.*

**Presentation 5**:
WAFA Nigeria

### 3.1 Presentation of activities of WAFA by Innocent Okuku

The Executive Secretary of WAFA, Dr Innocent Okuku, gave a presentation on "The Fertilizer Market in West Africa." He introduced WAFA as the regional body that brings together all private sector actors in the fertilizer space to have a common voice to engage with policymakers and have a joint set of actions to improve the regional fertilizer market towards achieving self-sufficiency in food and agricultural production and productivity in West Africa. With its 70+ member companies from 12 different countries in West Africa, WAFA aims to collectively address challenges of the regional fertilizer industry.

## Highlights of the Discussion

- WAFA operates a seven-pillar structure based on its focus to builda reliable fertilizer market that guarantees sustainable access to quality and affordable fertilizer to farmers in West Africa, through Finance, Dialogue, Information, Stewardship, Availability, Trade, and Quality.
- The Goal of WAFA reform in 2023 is to reorganize towards improved governance, efficient functioning, and improved service delivery.
- Key elements of the reform are to establish a functional Secretariat to run the affairs of the Association, revise the policies and governing rules to improve inclusiveness and accountability, set up partnership and programs for the development and deployment of activities, deliver more services to members and focus on sustainability of the Association.
- West Africa as a sub-region can consume over 10 million MT of fertilizer. Therefore, it is looking at ways to push fertilizer production in the region beyond the 10 million c MT annually.
- Fertilizer consumption has grown steadily since 2013 except for 2019 because of COVID-19. It is important to continuously grow this consumption pattern as the average consumption is around 22kg/h which is still not close to the 50kg/h declaration.
- Though Nigeria is ahead in terms of fertilizer consumption by product, it is far behind in terms of the various products used by Cote d'Ivoire and Mali. Therefore, it is time for the different producers to begin to look towards crop-specific blends as this is where we can get the kind of production output we are expecting to see. Retail prices are expected to reflect what is happening in the international market, but they do not. It is therefore important to create a structure that will be able to respond to the changes when prices are dropping.
- Most of the products whose prices are coming down on the international market are not yet in Nigeria.
- One thing WAFA has suggested and is pushing to work with stakeholders in the fertilizer sector is to create a structure for buffer stocking for the sub-region, so that whether prices are going up or are coming down, there will be a cushion to contain that.
- The main drivers of price trends include international fertilizer prices, government policies, and interventions, subsidies, limited incentives for private sector-led market development, logistical bottlenecks and associated costs, limited development of farm output markets, commodity crop farmers consistently using higher volumes, very weak intra-regional integration, and trade finance constraints.
- Main hindrances to consumption growth in West Africa include total volumes supplied staying at 3-3.5Million MT, very weak and inappropriate financing structures, high debt rate in subsidy programs, fertilizer sector still dominated by generic composition of fertilizers, inadequate education of smallholder farmers and low level of use of fertilizer responsive to crop varieties.

- Suggestions on improving the fertilizer sector in the sub-region includes significant infrastructure investments (ports expansion, rail transportation, inland waterways), enhanced regional integration in West Africa, improvement of financing for fertilizers, promotion of appropriate fertilizers as a part of input packages, positioning subsidy-related interventions at farm output end, prioritization of farm inputs as 'essential commodities, reduced government interference and focus on creating enabling environment for the private sector to thrive.

*Picture 11: Innocent Okuku making a presentation for WAFA.*

## 3.2 Demonstration of AfricaFertilizer Website.

Mr. Clement Donkor-Boateng demonstrated as well as presented the AfricaFertilizer website to participants and took them through a step-by-step process of navigating the various components on the website, using some of the country dashboards to support the presentation. After his presentation, Viola Kenduiywo, the Fertilizer Market Analyst for Kenya also gave a brief on the evolution of fertilizer subsidy in Kenya, how it started and where it is at present.

*Picture 12: Clement Donkor-Boateng making a presentation on AfricaFertilizer Website.*

**Presentation 6**:
HortiNigeria

### 3.3 Presentation on Soluble Fertilizer in Nigeria: Challenges and Solutions for the Horticulture Market, by Abdullahi Umar.

Mr. Abdullahi Umar made a presentation on behalf of HortiNigeria, an IFDC project which aims to facilitate a sustainable and inclusive horticultural value chain to promote food and nutrition security in Nigeria.

Mr. Umar presented the four components of HortiNigeria, which are Component 1; Increase productivity and income for smallholder farmers, Component 2; Pilot production systems innovation with Entrepreneurial farmers, Component 3; Increase access to finance for MSMEs and Component 4; Enhance sector Coordination and facilitate Business to Business linkages and partnerships.

### Highlights of the presentation

- Concerning the fertilizers market in the horticulture sector, an estimated 13,000 MT of Enhanced Performance Fertilizers (Soluble Fertilizers) are utilized by vegetable farmers particularly in the protected cultivation sub-sector.

- Market potential is huge particularly in Northern Nigeria for rop-specific fertilizer blends (E.g., tomato, potatoes, onions and pepper) and Southwest for enhanced performance fertilizers. On average Greenhouse farms spend N2.7 million/hectare on soluble fertilizers. An estimated 2500 protected cultivation farms in Ogun, Oyo, Kano, Kaduna, Abuja, and Lagos represents a potential market size of N6.75 billion.
- There is the need for investment in crop-specific fertilizers, establishment of soil-analysis services, establishmentof capacity building services for potential fertilizer experts within both public and privatesectors, increased financing in the supply chain and more investment in organic fertilizer.
- Global liquid fertilizer market attained a value of $2.64 billion in 2022.
- Drivers of the market include rising demand for climate smart farming (less fertilizer volumes to get maximum yields). Soluble fertilizers provide this and minimize negative environmental impact.
- Some of the challenges in accessing soluble fertilizers in the country include Government restrictions which have led to hoarding and various practices by input suppliers. Farmers have seen production costs increase by 310% between 2018- 2023 due to this, while produce price has increased by only 20%.

  Solutions to improving access and availability include building the capacity of local blenders in manufacturing crop specific fertilizers and enhanced performance fertilizers, while advocating for waivers to support companies that have tangible investment in developing Nigeria's horticultural sector e.g., Tomato Jos and other private sector players.
- Interventions from HortiNigeria include review of policies with policy makers to consider alternative solutions that will protect the environment, while also supporting the growth of the greenhouse industry, investment in research and development to increase access to safe-to-eat foods through the promotion of organic fertilizers.

*Picture 13: Abdullahi Umar making a presentation for HortiNigeria.*

**Presentation 7**:
Candel Group

### 3.4 Presentation on Candel Group by Mr. Charles Anudu.

Mr. Charles Anudu made a presentation for the Candel Group, a pesticide company which was importing liquid fertilizer from the UK before the ban on fertilizer importation, which made Candel to consider producing the liquid fertilizer locally to support the fertilizer industry and improve the livelihoods of farmers by reducing their costs and increasing theirproductivity.

### Highlights of the presentation

- Candel's business model is based on cost competitiveness via backward integration, faster innovation capabilities, faster market agility, faster cash conversion cycle, absolute control over quality, industry disruption through bottle return program and contract manufacturing opportunity.
- Candel's strategy in the agrochemical industry is to dominate the West African market through the supply of high yielding seeds, high quality herbicides, fertilizers and insecticides with competitive local manufacturing, progressive upstream integration, and best-in-class global technology partnerships.

**Presentation 8**:
FEPSAN

### 3.5 Presentation on PFI Raw Material Tracking, by FEPSAN

Mr. Moses Negedu presented FEPSAN an Association with the responsibility of providing an enabling environment for every stakeholder in the fertilizer space. He noted that in recent times FEPSAN has been tracking the movement of fertilizer raw material within the PFI program.

### Highlights of the Presentation

- FEPSAN, under the tracking process of fertilizer, gets data from blenders on the raw material they request from the PFI program based on the capacity of their blending plants.
- When the raw material request is approved by the NSIA, it is captured. When the raw materials are lifted from the port it is captured up to the point when it gets to the blending plant. Also, volumes of raw materials utilized of the NPK different blends.
- After import by the NSIA, FEPSAN has people at the port who are known as the collateral managers who provide information on what has come into the port and what has been lifted to be delivered to the blending plant.
- There are also collateral managers at the various blending plants that send records of what has been delivered to the blending plant. These collateral managers monitor and check the utilization of these raw materials by the blender and the quantity of NPK that is produced daily.
- FEPSAN gets dispatch and delivery records, and this is done through checks put in place, to know which trucks are conveying raw materials from the port, and such truck is expected to get to the blending plant anywhere in Nigeria within eight days.
- Total number of NPK fertilizers produced in 2022 stood at an average of 553,639.16 MT. of which 38% represents NPK 20-10-10 while 31% is NPK 15-15-15, while for the first quarter of 2023, only 98,415.52 MT was produced.
- Total number of products lifted in 2022 included 130,096.90 MT of DAP, 64,320 MT of GAS, 69,362 MT of MOP and 52,388.71 MT of Urea.
- The total quantity of products carried over into 2023 stood at 301,353 MT of fertilizer raw materials.

*Picture 6: Moses Negedu making a presentation for FEPSAN.*


### 3.6 Presentation on PFI and Its Restructuring, by NSIA

NSIA was represented by Mr. Iruansi Itoandon. According to him, NSIA has 72 registered blending plants cleared to participate in the PFI for the year 2023 and has made progress in onboarding for 2023 as they signed and sealed about 23 purchase and sales agreements with different blenders.

### Highlights of the Discussion

- In 2022, the PFI program had 46 blenders engaged out of the numbers of registered blenders, as they purchased one or more raw material from the NSIA.
- 2022 into 2023, raw materials were carried over in significant volumes, which since the history of the PFI program, happened just once in 2019 where huge inventory was carried over without commitment to anybody, all seated in the warehouse of the NSIA.
- The prices of raw materials have been set, contracts are ongoing, sales for 2023 have started and there are receivables for 2022 from the program.
- In terms of in-country inventory, DAP, MOP, and GAS are available in the warehouse of NSIA which has not been committed to any blender.
- The PFI program is at the mercy of the President, and NSIA is taking lessons from that reality, knowing that there is a new administration coming on board.

*Picture 16: Iruansi Itoandon making a presentation on PFI.*

**Presentation 9**:
Indorama Fertilizer

## 3.7 Presentation on Updates and Activities of Indorama Fertilizer Company Limited

Dr Surendra K. Srivastava made a presentation on behalf of Indorama Fertilizer and indicated that only 6% of the total land is under irrigation making yields far lower than the potential due to lack of irrigation facilities, low-quality seeds, and primitive agricultural practices.

### Highlights of the presentation

- NPK production business model across the world is based on confirmed sales orders, and because of its seasonality and the challenges of operating the plant during therainy season, NPK production is constrained to November-June. However, based on the demand, the plant is also operated during the rainy season although at lower production rates, so during low-demand months, NPK selling prices are extremely low.
- Even though fertilizer consumption per hectare has increased from 14.27 kg/ha in 2015 to 61.1 kg/ha in 2021, Nigeria's fertilizer usage is one of the lowest in the world. Nigeria's fertilizer consumption is still only 45 % of the world average. This shows that the potential for growth in fertilizer consumption is huge in addition to the increase in consumption by

way of an increase in the crop cultivated area.

- Total Urea sales declined in 2022 due to lower NPK production by blenders, high input prices making fertilizers unaffordable, unfavorable crop barter ratio leading to a reduction in crop acreage and crop shift to less Urea consuming crops such as legumes, millet, sorghum, soybean, groundnut, etc.
- Due to high costs of MOP and DAP, it became difficult for PFI to source raw materials for NPK blending, and there was less uptake of NPKs from farmers due to higher prices. Private blenders also reduced their volumes due to the same factors which reduced their NPK sales drastically.
- Urea consumption for direct application was not really affected, due to the subsidized price and ample supply from Indorama, unlike NPK consumption which was hit hard due to high costs of imported raw material (MOP and DAP) for blending which consequently led to high farm gate prices for NPKs for farmers.
- Indorama Fertilizer has continued to supply the ever-increasing fertilizer market in Nigeria and supplied around 739MT in 2022. Urea supply decreased in 2022, compared with 2021 with a dip of 2.9%.
- Indorama Fertilizer Limited Launched Neem Coated Urea in 2022 and supplied 15,340 MT in domestic markets.
- Since the start of 2021, international Urea prices have increased. However, Indorama has ensured that the farm gate prices in Nigeria are well under control as Nigeria records one of the lowest farm gate prices because of the subsidized pricing strategy adopted by Indorama.
- IFL keeps track of stock levels across all the States and ensures that there is enough fertilizer for farmers, and this has helped control farm gate prices in Nigeria.
- During Jan-Dec 2022, IFL trained 159,000 farmers, bringing the total number of farmers trained between 2016-2022 to 1.33 million.
- Neem-coated Urea institutional trials were conducted in five States (Kano, Abuja, Kaduna, Edo and Kwara). Thefinal report is expected to be released soon.

*Picture 17: Surendra Srivastava making a presentation for Indorama Fertilizer.*

**Presentation 10**:
Dangote Fertilizer

### 3.8 Presentation on Updates and Activities by Dangote Fertilizer

According to Mr. Muhammad Ndaya, who made a presentation on behalf of Dangote Fertilizer, the organization aims to make Nigeria self-reliant in food production. by providing distinctive, high quality fertilizer products and services to improve crop productivity and deliver superior returns to farmers.

### Highlights of the presentation

- Dangote Fertilizer Limited focuses on making fertilizer affordable and available to farmers, eradicating the influence of intermediaries, and improving product efficiency through research, innovation, and the latest technology.
- Dangote Urea is an export-quality product with global standards, having low moisture content for easy handling and application.

- For 2023, Dangote Fertilizer plans to sell 650,000 MT and export1,150,000 MT of fertilizer.

*Picture 7: Ndaya Muhammad making a presentation for Dangote Fertilizer.*

**Presentation 11**:
FFMARD/FISS

### 3.9 Presentation on Updates and Activities of FMARD/FISS

The Deputy Director of FISS, Adamu Sale, in his presentation brought up the history indicating that the re-structuring of FMARD by the Office of the Head of the Civil Service of the Federation that was approved in June 2014 and the Federal Fertilizer Department (FFD) was renamed to "Farm Inputs Support Services Department (FISSD)". FISS, according to him seeks to provide, in a timely manner, good and quality agricultural inputs, particularly fertilizer, to farmers in the most cost-effective manner nationwide, in line with set standards, to increase agricultural production and ensure food security and good livelihoods for rural farmers.

### Highlights of the Discussion

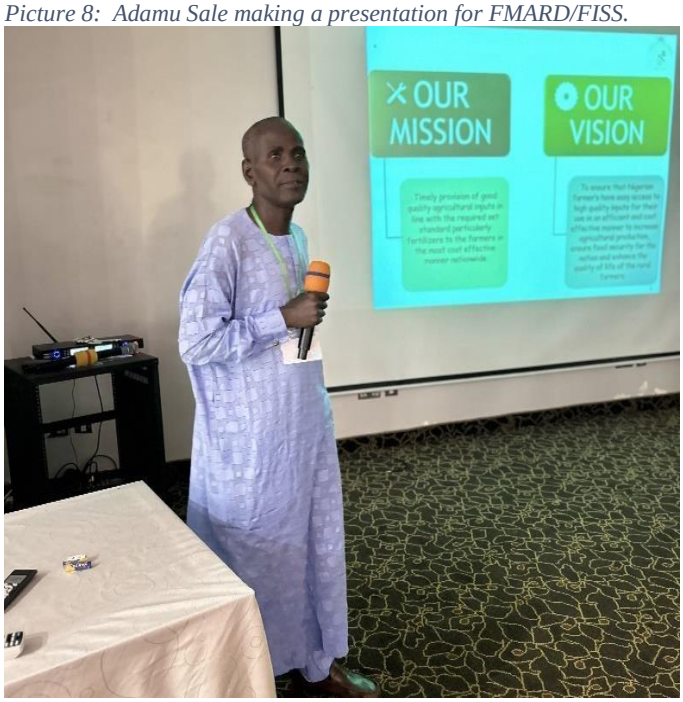
FISS aims to do the following:
Regulate fertilizers and agro-chemicals quality and formulate policy and regulatory framework on fertilizer and other agricultural inputs for the country, in collaboration with ECOWAS Sub-Region.

- Conduct field trials on a pilot basis, in collaboration with relevant mandated research institutes on newfertilizer technologies to determine adoption or otherwise.
- Conduct timely and equitable distribution of fertilizers and other agricultural inputs in the country as well as develop, promote, and adopt the use of organic fertilizer in the country to guarantee the supply of high-quality fertilizers (inorganic and organic) and other agricultural inputs in accordance with the required set standards for Nigerian farmers.
- The restructuring of the PFI brought about sustainability, smart fertilizer subsidy support to the smallholder farmers, and stimulating farm productivity for national food security.

Some of the achievements of the FISS departments include:

- Signing of the National Fertilizer Quality Control (NFQC) Act into law in October 2019 and the regulations signed in November 2020.
- Commencement of the registration of the fertilizer operators using the National Fertilizer E-Permit Platform strengthened the capacity of Fertilizer Inspectors in the 36 States and the Federal Capital Territory through national training workshops on ways to detect fake and adulteratedfertilizers as they facilitate the implementation of the NFQC Act, 2019
- Promotion of the harmonized Laboratory Analytical Methods for Fertilizer Quality and organic fertilizer to complement inorganic fertilizer.
- Working with CROP Life to ensure passage of the agro-chemical bill which is before the National Assembly and liaising with the National Seed Council to ensure the availability and accessibility of quality seeds by farmers.
- Multi-stakeholders Workshop on the Proposed Bill for the "Establishment of the Nigerian Pesticides Council and other Related Matters Connected therewith 2020". The result is to incorporate what is harvested and sent to the National Assembly before the second reading.
- Harmonization and standardization of t national laboratory fertilizer analytical methods to improve fertilizer quality control efforts of the Ministry.
- Development of the country's first organic agriculture policy to encourage its practice.

*Picture 8: Adamu Sale making a presentation for FMARD/FISS.*




## Workshop Recommendation

Before the meeting ended, participants gave the following recommendations:

- It is important to have an official way of capturing all fertilizer products that are being exported out of the country by Customs and the NPA.
- It will be good to expand the FTWG in a way to allow for other workshops, not necessarily to validate statistics and discuss data but other issues affecting the fertilizer sector.
- There is a need for the FTWG to work on a policy document on some of the things they do in the fertilizer sector.
- Due to the delay in validating the data at the FTWG workshop, AF should organize an online meeting for stakeholders to pre-validate and discuss the data before the actual date of the workshop.
- Stakeholders involved in export should try as much as they can to ensure that Customs gets the right data when they are declaring their forms so that we can get accurate data to help make reconciliation of data much easier.
- As we do pre-validation with providers of the data at national level, it is important to also

consider post validation at the regional level going forward, to harmonize data from different countries as we see products flowing across countries in West Africa.

## Closing Remarks

The workshop ended with short closing remarks from Sebastian Nduva, AfricaFertilizer Program Manager; Innocent Okuku, WAFA Executive Secretary; and Yusuf Dramani, IFDC Nigeria Country Director.

Sebastian Nduva, on behalf of AfricaFertilizer, thanked everyone for their effort and time committed to the two-day workshop and appreciated the participation of IFDC staff and development partners present at the workshop.

Innocent Okuku, on behalf of the private sector across West Africa, thanked AfricaFertilizer and Development Gateway for the data generated. He said it is important that data continues to improve in quality and for the private sector to continue to support the FTWG exercise going forward.

Yusuf Dramani appreciated everyone for their efforts and for making the FTWG workshop a success. According to him, this is the kind of spirit industry actors would like to see. He encouraged allstakeholders to put in this kind of effort in their various organizations and countries, to get the best out of our economy for the benefit of our farmers.

# Annexes

## List of participants

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