

TECHNICAL REPORT

Fertilizer Technical Working Group 2022 Fertilizer Statistics Validation Workshop Zambia



August 30th – September 1st 2022, Lusaka, Zambia

AfricaFertilizer.org is a joint initiative led by IFDC, in partnership with, IFA, Development Gateway, WFA and the Africa Union to facilitate exchange of information about soil fertility, fertilizers and good agricultural practices in Africa



Table of Contents

List of Acronyms	3
List of Tables	4
List of Figures	4
1.0 Background	5
1.1 Objectives and Expected Outcomes of the Workshop.....	5
1.1.1 Objectives of the Workshop.....	5
1.1.2 Expected Outcomes of the Workshop.....	5
1.2 Methodology	6
2.0 First Day (30 th August, 2022)	6
2.1 Participants.....	6
2.2 Opening Ceremony	6
2.3 Overview of Africafertilizer.org	6
2.4 Update on Zambia Fertilizer Market.....	7
2.5 Introduction and Overview of Development Gateway	8
2.6 Available Trade Data, Methodology and Process of Validation	10
2.7 Demonstration of VIFAA Dashboards	11
3.0 Second Day (31 st August, 2022)	11
4.0 Third Day (1 st September, 2022)	11
4.1 Review of processed data.....	11
5.0 Fertilizer Imports and Exports	12
5.1 Fertilizer Apparent Consumption	13
6.0 Recommendations.....	14
6.1 Conclusion	14
7.0 Annexes.....	15
7.1 Zambia FTWG Workshop Agenda.....	15
7.2 List of participants	17

List of Acronyms

Abbreviation Definition

AFAP	African Agribusiness Partnership
AFO	AfricaFertilizer.org
AGMARK	Agricultural Market Development Trust
AGRA	Alliance for a Green Revolution in Africa
ASTGS	Agricultural Sector Transformation and Growth Strategy
COVID-19	Coronavirus Disease 2019
DG	Development Gateway
FAO	Food and Agriculture Organization
FTWG	Fertilizer Technical Working Groups
G77	Group of 77
GODAN	Global Open Data for Agriculture and Nutrition
ICT	Information and Communication Technologies
IFA	International Fertilizer Association
IFDC	International Fertilizer Development Center
FISP	Fertilizer Input Support Program
JASCOM	Joint Agriculture Sector Consultation and Cooperation Mechanism
ZRA	Zambia Revenue Authority
ZARI	Zambia Agricultural Research Institute
MOA	Ministry of Agriculture
NGO	Non-Government Organization
USAID	US Agency for International Development
VIFAA	Visualizing Insights on Fertilizer for African Agriculture
WAFA	West African Fertilizer Association

List of Tables

Table 1: Composition of Participants	6
Table 2: Zambia trade and apparent consumption, 2014 – 2022	12
Table 3: Zambia fertilizer imports, 2014 – 2021	12
Table 4: Zambia fertilizer apparent consumption	13

List of Figures

Figure 1: Visualization of imports data on dashboard	8
Figure 2: Apparent Consumption of Fertilizer in African countries.....	13

List of Photos

Photo 1: Participants actively validating fertilizer trade data	11
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1.0 Background

The International Fertilizer Development Centre (IFDC), through the AfricaFertilizer.org (AFO) initiative, has been working with the CountrySTAT program of the Food and Agriculture Organization (FAO) of the United Nations, over the past nine years, to produce and disseminate reliable and up-to-date official statistics on fertilizer production, imports, exports, and consumption in countries across Africa.

Fertilizer Technical Working Groups (FTWG) were established in 2012 in 11 sub-Saharan African countries, including Kenya. These working groups have been responsible for reviewing country level data and presenting statistics results tables for validation by National Technical Working Groups before the publication of the data. This year saw the establishment of FTWG in 3 more sub-Saharan African countries; Malawi, Zambia and Mozambique.

AFO, through its partnership with 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 to use reliable fertilizer data for formulation and monitoring of agricultural development policies, strategies on food security, promotion of fertilizer trade within East and Southern Africa and beyond, as well as update industry actors on new strategies developed in the year under review.

Zambia's 2022 inaugural annual meeting was co-organized with Development Gateway (DG), an international non-profit organization that provides technical tools and advisory services to country governments and development institutions. DG is collaborating with AFO to develop the Visualizing Insights on Fertilizer for African Agriculture (VIFAA) dashboard to better manage and visualize country level data.

The workshop was held on August 30th to September 1st 2022, in Lusaka, Zambia, On August 30th, participants were taken through the program overview and objectives, given a VIFAA demonstration, then the Zambia fertilizer landscape was discussed. Following this, the 2014 - 2022 Zambia fertilizer statistics were discussed and validated.

1.1 Objectives and Expected Outcomes of the Workshop

1.1.1 Objectives of the Workshop

- Introduce participants to the IFDC, AFO, the VIFAA dashboard and get feedback on the platform.
- Validate national fertilizer statistics for 2014 to 2022 (July).
- Create 2014 – 2022 series of statistics output tables.
- Inform participants about the country's non-governmental fertilizer programs, initiatives and get feedback on how the private sector is addressing the ongoing fertilizer crisis.
- Discuss the Government's fertilizer subsidy program design and impact on the fertilizer market.

1.1.2 Expected Outcomes of the Workshop

- Fertilizer statistics for 2014 – 2022 (July) validated.
- Statistical output tables on fertilizer imports, exports, and apparent consumption for 2014 – 2022 (July) prepared.
- Participants feedback on VIFAA dashboard obtained.
- Participants updated on both non-Governmental and Government run country fertilizer programs and initiatives.

1.2 Methodology

The methodology of the workshop encompassed presentations, questions/answers, and discussion sessions. The participants were given in depth presentations about IFDC, AFO and VIFAA after which feedback was given on the methodology of data collection and presentation. Discussion sessions centered around the current status of the fertilizer market, the impact of the Government's fertilizer subsidy program and how Malawi is being affected by the global fertilizer crisis.

Participants reviewed and validated available import-export data for Zambia and made suggestions/input for the collection and presentation of the data.

2.0 First Day (30th August, 2022)

The morning session of the first day was used to present overview of AfricaFertilizer.org activities, present the overview of the Zambia fertilizer market. In the afternoon, group work data validation of 2016 - 2022 datasets commenced.

2.1 Participants

The first day of the workshop was attended by participants from both public and private sectors.

Public	Private	NGO	Male	Female	Total
12	9	2	18	5	23

Table 1: Composition of Participants

2.2 Opening Ceremony

The workshop was officially opened by a welcome address from Sebastian Nduva, the AFO Program Lead. In his short address, he welcomed and encouraged participants to fully participate and cooperate for the success of the workshop. He then passed on the program to Sugar Kabalika, the IFDC Zambia consultant to give a brief oversight on Zambia and moderate the rest of the workshop.

2.3 Overview of Africafertilizer.org

Sebastian Nduva, took participants through the AFO overview.

**Download
Presentation:
AfricaFertilizer.org**

Highlights

- AFO seeks to be the leading provider of fertilizer data and information for Africa to support market transparency, improve decision-making, and deliver a more prosperous agriculture sector.
- It is hosted by IFDC and works with key public and private fertilizer sector players, including national FTWGs, fertilizer importers, producers, retailers, agriculture/fertilizer experts and consultants.
- The core areas of competence of AFO are Price, Statistics, Markets, and Products (Market Situation Statement). AFO's other key partners include IFA, which is a donor for fertilizer statistics; DG, also a donor and a partner for fertilizer data visualization and website development; Argus Media, a donor and a partner for fertilizer statistics and market information on a daily and monthly basis. WFA is a regional partner for

fertilizer data gathering and validation and provides data on local fertilizer product prices, international prices, and the regional market.

- FertiNews, AFO's electronic newsletter about the fertilizer sector in Africa, was produced monthly throughout 2021. The advanced copy of the 2022 Fertilizer Plant Register was also produced.
- AFO and DG have developed the VIFAA dashboard to support visualization of fertilizer statistics/data in Ghana, Nigeria, and Kenya. AFO started the publication of the Africa Fertilizer Watch in July 2020, in collaboration with the African Union, and with technical and financial support of partners, including the Bill & Melinda Gates Foundation, DG, IFA, WAFSA, the African Agribusiness Partnership (AFAP), US Agency for International Development (USAID), and Feed the Future.

2.4 Update on Zambia Fertilizer Market

Jennifer Chongo from the Ministry of Agriculture gave a presentation on the current Fertilizer Input Support Program FISP in its current guise and updated the participants on Government interventions and expectations for the coming season.

Highlights

- The Farmer Support Program FSP was initiated in 2002 and was intended to support vulnerable farmers and encourage greater levels of Agricultural activities to produce the Zambian Food resource basket. In 2008 the program expanded with a focus being on Fertilizer and it was renamed the Farmer Input Support Program.
- The main purpose of the program is to give affordable access to inputs to small scale farmers.
- The target for the 2022-2023 Farming season is 1.14 million farmers across the country quantifying 307,000 Metric Tons of Urea and D-Compound (10-20-10+ 6s) fertilizer.
- The intention of Government is to have the inputs delivered by the end of November 2022.

Daniel Maimbo from FSG Zambia also gave a presentation on the current environment within the Fertilizer sector from the Private sectors point of view and important highlights included the lack of clarity they have from Government policy towards the sector, the current impact of the Russia/Ukraine war on fertilizer pricing and supply bottlenecks to name a few.

- The private sector is continuing to create their own markets through the blending sector as farmers want specific products based on their soil requirements.
- There is need for Government to also implement a more tailored solution in FISP so as to give farmers better opportunities to optimize their yields through soil specific fertilizer blends rather than "a one size fits all approach"
- There needs to be more done from regulators to monitor the quality of fertilizer being imported by some of the private sector companies so as to assure farmers of a bare minimum quality when they are purchasing inputs.

2.5 Introduction and Overview of Development Gateway

Sharon Ogolla from Development Gateway then gave a brief introduction and overview of the work that Development Gateway does and how they have supported the AFO project since inception and their expectations for the continued expansion of the project and its positive impact on farmers in the region.

**Download
Presentation:
Development Gateway**

VIFAA DASHBOARDS DEMO

Samuel Ali of IFDC Nigeria and Viola Kendy of IFDC Kenya gave a live demonstration of the already running Nigerian and Kenyan Dashboards respectively. The presentations gave the Zambian stakeholders a clearer understanding of the visual impact of the dashboards and the benefits the data has provided Government and Private sector stakeholders in the two respective countries. Samuel Ali also encouraged private fertilizer participants to embrace the program and share the necessary datasets and information required in order for Zambia to have the most effective dashboard.

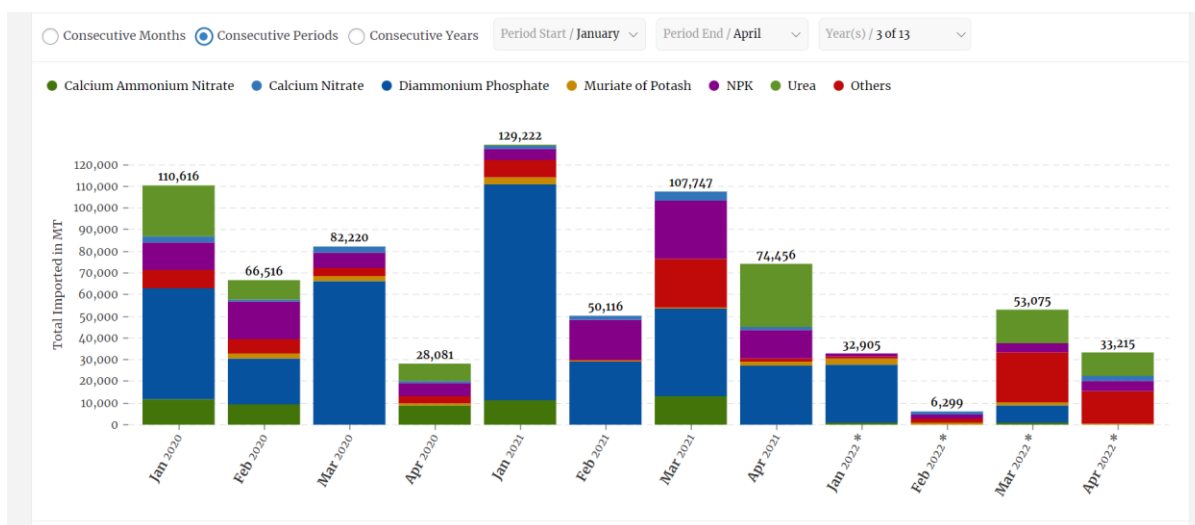


Figure 1: Visualization of imports data on dashboard

RUSSIA/UKRAINE CRISIS

Sebastian Nduva then led an engaging discussion amongst the participants on the impact of the Russia/Ukraine crisis and the interventions and approaches adopted by different countries to counteract these effects.

Highlights Included

- The intervention of the UN to partner with OCP to supply subsidized fertilizer into Africa to alleviate price increases
- Rabobank has a financing facility set up for cheaper funds to be accessed for suppliers trading in Africa

- Private sector stakeholders complained of a lack of clear strategy from the Zambian Government on solutions to assist local suppliers in mitigating the effects of the higher prices of imports of Fertilizer due to the crisis

West Africa

- Through the West Africa Fertilizer Association (WAFA), the countries have attracted attention from regional economic blocks i.e., ECOWAS with discussions escalated to the UN through formation of a UN Global Crisis Response Group.
- AFO has been feeding data into this consortium through IFA on inventory, crop: fertilizer price ratios, market characterizations etc to advice next steps.
- Lobbying for Urea supply from regional producers e.g Nigeria
- Lobbying for financing through Africa Development Bank (AFDB)

Southern Africa

- Government reconsideration on subsidy levels
- Push for alternative fertilization regimes

Kenya

Africafertilizer.org through its partnership with Development Gateway is contributing towards the addressing the current fertilizer crisis by providing data support through a fertilizer watch. This is a monthly analysis of how fertilizer prices are on ground. Through a discussion between AFO and various stakeholders in the fertilizer industry during the workshop, the following interventions on the current fertilizer crisis were presented by the stakeholders:

- Optimization of logistics i.e., co-shipping with importers and other countries such as Zambia, Tanzania, etc on different products which helps in operational efficiency.
- Seeking alternative fertilizer sources e.g., Sourcing for granular CAN instead of prilled CAN.
- Reducing dependence on Russian gas for fertilizer production and looking for other alternatives.
- Replacement of straight fertilizer with blends which are less costly.
- Coming up with new products with cheaper raw materials.
- Adjusting of production schedules to merge stocks.
- Optimizing fertilizer prices and stabilize market prices ensuring that prices are not static but try to remain as competitive as possible. This can be done through reduction of margins. OCP talked about monitoring the distribution channels to ensure they do not make supernormal profits at the expense of the consumer.
- Also optimizing cost of production and keeping it as low as possible.
- Conducting discussions to address the current fertilizer crisis.

2.6 Available Trade Data, Methodology and Process of Validation

Fred Gyasi, the AFO Website and Fertilizer Statistics Specialist from Ghana, took participants through the details on the available country data and the expected output of the group work session. There was only one set of data that was provided for by the Zambia Revenue Authority (ZRA)

Download Presentation:
Available Trade Data,
Methodology and processes of
data validation

Highlights

- The main goal of the data processing is to determine the *actual* quantity of fertilizer farmers are consuming, however there are challenges in accurately measuring this quantity. Therefore, the available trade, production and non-agricultural use data is used to determine the *apparent* consumption of fertilizer.
- Apparent consumption = Production + Imports – Exports – Non-agricultural use of imports. In addition, carryover stocks from the previous year are subtracted to get closer to reality.
- Trade data also confirms which fertilizer types are imported, the location of origin and the import patterns of the country. Aggregated data about local production volumes are also gives more information about the local market.
- Input data, such as trade data and production data, is processed through a cleaning and validation process done in collaboration by AFO, WAFSA and CountrySTAT. The output is in the form of summary tables data sets for upload to CountrySTAT.
- Data can be received monthly or annually. Data sets are presented in excel sheets where the following fields are added in order to guide validation:
 - Product Name
 - New HS code
 - Usage (fertilizer, industrial, enhancers, not fertilizer)
 - Status
- The raw trade data obtained from each country has to have the following key fields:
 - HS codes
 - Volumes (net weight and USD value)
 - Product details
 - Name of importer
 - Origin/destination of consignment
 - Port/Border entry
 - Date of entry/exit
- The output tables generated include:
 - Validated fertilizer production
 - Validated fertilizer imports
 - Validated fertilizer exports
 - Validated fertilizer apparent consumption

- Participants should give an estimate of carryover stocks which can help clarify the actual import quantity in the data tables.

2.7 Demonstration of VIFAA Dashboards

Fred Gyasi led the participants in the validation process of the 2014 to 2022 imports and exports datasets. This activity continued the next day since the data for 8 years were a lot.



Photo 1: Participants actively validating fertilizer trade data

3.0 Second Day (31st August, 2022)

The morning and afternoon sessions of the second day were used to validate the 2014 to 2022 data sets provided for by the Zambia Revenue Authority. This was facilitated by Fred Gyasi with contributions from the various stakeholders validating the types, designations and quantities over the period. The sessions were laborious and the participants showed great resolve and determination to go through 8 years of Data validation over the course of the second day, it was a fantastic effort.

4.0 Third Day (1st September, 2022)

The morning session of the second day was used to review the data that was validated the previous day, present validated country output tables, presentation and discussions on the VIFAA dashboard. In addition to this a pathway to the launch of the main Zambian Dashboard was charted with anticipated launch before the end of 2023.,

4.1 Review of processed data

Fred Gyasi led participants through the review of validated data.

Highlights

- Urea has consistently been the product with the highest quantity of imports over the validated period with a cumulative quantity of 1,728,004.00 Metric Tons.

- There was a drop of 10% of imports of fertilizer between 2020 and 2021 and this is likely to have been brought on with the onset of the Covid 19 Virus.
- D Compound is usually imported from Jordan, China and Saudi Arabia
- Ammonium Sulphate is imported mainly in its use as a Blending material
- On average over the period Zambia exported 4,500.00 Metric Tons of Fertilizers
- Ammonium Nitrate has consistently been the product with the highest quantity of exports over the validated period with a cumulative quantity of 17,358.00 Metric Tons.

5.0 Fertilizer Imports and Exports

Official fertilizer imports to Zambia decreased by 130,509 Metric Tons from 2020 to 2021 and this is suspected to be due to there being a two year Government contract for Suppliers over the period which allowed them to import additional stock earlier as well as the impact of the Covid 19 pandemic There was an average export in the region of 4,500 Metric Tons per year over the period with Ammonium Nitrate being the product exported the most into the Democratic Republic of Congo.

ZAMBIA FERTILIZER STATISTICS - TONS									
HS Code	2014	2015	2016	2017	2018	2019	2020	2021	2022*
Production									
Import	519,079	588,754	468,649	660,354	520,099	647,463	758,755	682,246	270,201
Export	4,931	1,446	2,432	3,258	5,241	9,588	3,292	6,467	3,748
Apparent Consumption	514,148	587,307	466,217	657,183	515,020	637,875	755,462	675,779	266,489
*2022 - Data till July.									

Table 2: Zambia trade and apparent consumption, 2014 – 2022

ZAMBIA TOP FERTILIZER IMPORTS PER YEAR										
HS Code	Fertilizer Name	2014	2015	2016	2017	2018	2019	2020	2021	2022*
3102100000	Urea	161,708	243,485	145,027	258,154	193,723	251,172	353,459	232,312	101,736
3105200000	NPK	105,025	85,717	73,589	190,202	147,394	214,189	225,507	230,757	53,900
3102300000	Ammonium Nitrate	55,256	71,024	70,650	66,038	77,039	90,780	87,980	104,662	54,701
3105400000	Monoammonium Phosphate	59,500	59,567	65,339	31,561	25,983	19,161	16,355	23,325	5,936
3102210000	Ammonium Sulphate	55,752	42,126	44,294	42,634	14,013	18,367	16,106	15,870	15,350
3104200000	Muriate of Potash	34,438	46,320	35,776	22,241	26,995	15,768	13,483	15,338	11,617
	Others fertilizers	47,400	40,514	33,976	49,524	34,954	38,026	45,865	59,982	26,962
Total (mt)		519,079	588,754	468,649	660,354	520,099	647,463	758,755	682,246	270,201
*2022 - Data till July.										

Table 3: Zambia fertilizer imports, 2014 – 2021

5.1 Fertilizer Apparent Consumption

Apparent consumption of fertilizers in Zambia has averaged 600,000.00 Metric Tons over the period, though it was agreed that this figure would require further data sets from the Zambia Statistical Agency (ZSA) and the Zambia National Farmers Union (ZNFU) in order to give a more accurate figure. It was however agreed that for the purpose of this exercise the figures could be validated.

ZAMBIA TOP FERTILIZER APPARENT CONSUMPTION PER YEAR										
HS Code	Fertilizer Name	2014	2015	2016	2017	2018	2019	2020	2021	2022*
3102100000	Urea	160,820	243,043	144,750	258,035	192,002	249,157	352,064	232,172	101,317
3105200000	NPK	104,835	85,335	72,425	188,728	146,506	211,937	225,132	226,151	53,790
3102300000	Ammonium Nitrate	51,553	70,618	70,427	65,098	74,888	86,045	86,906	103,215	52,021
3105400000	Monoammonium Phosphate	59,440	59,567	65,339	31,531	25,923	19,161	16,355	23,325	5,936
3102210000	Ammonium Sulphate	55,752	42,126	44,294	42,634	14,013	18,103	16,106	15,870	15,292
3104200000	Muriate of Potash	34,438	46,320	35,776	22,211	26,995	15,768	13,274	15,278	11,617
	Others fertilizers	47,310	40,298	33,206	48,946	34,694	37,704	45,625	59,768	26,517
Total (mt)		514,148	587,307	466,217	657,183	515,020	637,875	755,462	675,779	266,489

*2022 - Data till June.

Table 4: Zambia fertilizer apparent consumption

The graph below shows where Zambia's apparent consumption ranks in comparison to Ethiopia, Kenya, Tanzania, Malawi, Mozambique, Rwanda, Uganda and Burundi over the period 2016 to 2021. Zambia's apparent consumption is higher than Tanzania, Malawi, Mozambique, Rwanda, Uganda and Burundi, and lower than Ethiopia and Kenya.

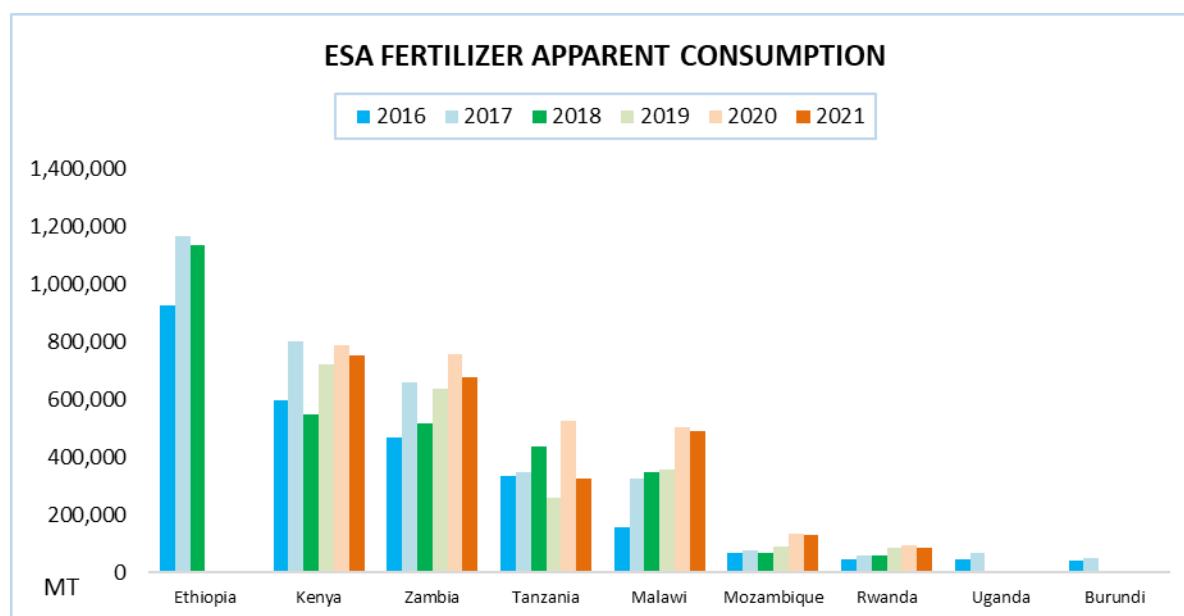


Figure 2: Apparent Consumption of Fertilizer in African countries

6.0 Recommendations

- Mr Phidelis Mubagwe of Omnia recommended the inclusion of Organic fertilizers onto the dashboard as they are beginning to substantially eat into the chemical fertilizer market and omitting them will not give a true reflection over the long-term.
- ZRA representatives requested if it would be possible for IFDC to facilitate training to border agents so as to better identify and designate fertilizers at the points of entry and exit for more accurate capturing of data.
- Stakeholders requested that the FTWG can be held at the end of the season rather than in the middle of it so has to have a more complete data set.

6.1 Conclusion

In his closing remarks, Sebastian Nduva, AFO Programme Lead, thanked and appreciating all participants for their input into the data validation exercise and the VIFAA agenda of the workshop. Zambia Market Consultant then asked all the participants in the group to give their feedback as a way of adjourning the meeting. The representatives appreciated AFO for bringing together stakeholders from various fertilizer industries together. They also commended on the work that AFO does including the retail price collection, development of VIFAA dashboard, conducting discussions on the current fertilizer crisis among others.

7.0 Annexes

7.1 Zambia FTWG Workshop Agenda

2022 ZAMBIA FTWG WORKSHOP AGENDA
VENUE: CIELA RESORT
LUSAKA, ZAMBIA

Tuesday 30th Aug 2022		
Time	Activity	Responsible
0800-0830H	Registration	Lydia N.
	Welcome Address and introduction of participants	Pamela M.
0830-0840H	Program overview and objectives	Sugar K.
0840-0900H	Overview of AFO activities	Sebastian N.
0900- 0920H	Update on Zambia Fertilizer Landscape	MoA Rep
0920-1000H	Learning from other countries <ul style="list-style-type: none"> - Current crisis - learning from other countries - Regional portal - Nigeria and Ghana Accelerator countries	Sebastian N. /All
1000-1030H	Coffee break	
1030-1120H	VIFAA Dashboards- Demo	Samuel A/Viola K.
1120-1300H	Review of available data for Zambia for VIFAA dashboard	Sharon O/ Fred G.
1300-1400H	Lunch break	
1400-1430H	Data validation process & Review of datasets available for Zambia.	Fred G.
1430-1700H	Group work-Processing import/export data sets for Zambia	All
1700-1730H	Coffee break/Adjourn	Fred G.

Wednesday 31st Aug 2022		
Time	Activity	Responsible
0800-0820H	Registration	Lydia N
	Program overview and objectives	Sugar K.
0820-1030H	Group work-Processing import/export data sets for Zambia	All
1030-1100H	Coffee break	
1100-1300H	Group work-Processing import/export data sets for Zambia	All
1300 -1400H	Lunch break	
1400– 1630H	Group work-Processing import/export data sets for Zambia	All
1630 – 1700H	Coffee Break/Adjourn	Fred G.
Thursday 1st Sept 2022		
0800 – 0820H	Registration	Lydia N.
	Program overview and objectives	Sugar K.
0820- 1030H	Finish on group work-Processing import/export data sets for Zambia	All
1030– 1100H	Coffee break	
1100-1200H	Presentation of validated Country Output tables	Fred G.
1200-1300H	Use of validated data	Fred G
1300-1330H	Next steps and closing remarks	Sebastian N.
1330-1430	Lunch	

7.2 List of participants

	Name	Organization
1	Gregory Chileshe	Zambia Revenue Authority
2	Chibale Chibale	Zambia Revenue Authority
3	Robert Salati	Zambia Agricultural Research Institute (ZARI)
4	Rodgers Kabiti	Zambia Agricultural Research Institute (ZARI)
5	Shadreck Mwale	Min. of Agriculture Dept of Agriculture
6	Jennifer Chongo	Min. of Agriculture Dept of Agribusiness
7	Harad Lungu	Zambia National Farmers Union (ZNFU)
8	Kondwani Mwafuilwa	Nitrogen Chemicals of Zambia (NCZ)
9	Phidelis Mubagwe	Omnia Fertilizer
10	Siankoni Zulu	ETG/ZamFert
11	Agness Mukuka	Keynote Logistics
12	Martin Chaikatisha GM	Nerias Fertilizer
13	Kwazi Dlamini	Nyiombo Investments Ltd
14	Yvette Phiri	Ocean Front Clearing and Forwarding
15	Henry Chiyota	Sealand Commodities/Rockleaf
16	Billy Chibuye	NCZ
17	Daniel Maimbo	FSG Fertilizer
18	Herold Musonda	Zambia Statistics Agency (ZSA)
19	Danie Duplessis	Zamfert
20	Elizabeth Banda	Zambia Environmental Management Agency (ZEMA)
21	Stanley Mwanza	Zambia Compulsory Standards Agency (ZCSA)
22	Dr. Ken Msiska	Director Plant, Quarantine & Phytosanitary (MOA)
23	Kampamba Makwaya	FAO/CountryStat
	Trainers/Support	
1	Sebastian Nduva	IFDC
2	Samuel Ali	IFDC
3	Fred Gyasi	IFDC
4	Pamela Mwajuma	IFDC
5	Lydia Ndanu	IFDC
6	Viola Kenduiywa	IFDC
7	Sugar Kabalika	IFDC
8	Sharon Ogolla	DG