FEED THE FUTURE

The U.S. Government's Global Hunger & Food Security Initiative

Photo by Patrice Annequin

WEST AFRICA FERTILIZER BUSINESS INFORMATION GUIDE

2021 EDITION

USAID FROM THE AMERICAN PEOPLE

CEDEAO ECOWAS

wafa

West African Fertilizer Association
Association Ouest-Africaine de l'Engrais

IFDC

Developing Agriculture from the Ground Up

CONTENTS

February 2021

This publication is made possible by the generous support of the American people through Feed the Future, the U.S. Government's Global Hunger and Food Security Initiative. The contents are the responsibility of IFDC in collaboration with the West Africa Fertilizer Association (WAFA) and do not necessarily reflect the views of Feed the Future or the United States Government.

1. INTRODUCTION TO THE GUIDE

Photo: Malick Niang

INTRODUCTION

The ECOWAS fertilizer policy stresses the need to stimulate fertilizer supply and demand in the region. The USAID West Africa Fertilizer Program (USAID WAFP), implemented by the International Fertilizer Development Center (IFDC) between 2012 and 2017, furthered this goal through empowering private sector businesses operating in the region, by professionalizing and promoting sustainable fertilizer business development models.

Since 2018, this support has been extended and expanded by the **Feed the Future Enhancing Growth through Regional Agricultural Input Systems (EnGRAIS) for West Africa** project, also implemented by IFDC. To accomplish these objectives, the program which covers all the 15 ECOWAS member states plus Chad and Mauritania, aims to achieve the following:

- Competitive, inclusive, private sector-led, regional fertilizer market strengthened;
- Comprehensive input packages developed and disseminated in cooperation with CORAF/WECARD;
- Fertilizer policy and regulatory systems across West Africa improved and harmonized in accordance with ECOWAS guidance; and
- Mobilizing commitment and harmonizing engagement from key stakeholders across West Africa supported by mission buy-ins.

The **West Africa Fertilizer Business Information Guide** (WAFBIG) presents a regional and comprehensive overview of the fertilizer business environment in West Africa. Its purpose is to furnish existing and prospective private sector players with the requisite fertilizer business and market information to guide and inform the industry's decision-making. WAFBIG will be updated and published annually in close collaboration with the West Africa Fertilizer Association (WAFA) and AfricaFertilizer.org.

In this new and enriched version of the former West Africa Fertilizer Business Information Map (WAFBIM), you will find the usual and updated **country market overviews** and statistics, **maps and profiles of fertilizer production** and blending facilities, and regional **fertilizer regulations**, labeling and packaging standards applicable in West Africa.

You will also find a new set of additional information, including **fertilizer logistical and cost** information along key trade corridors, crop-specific **fertilizer recommendations** and agro-input packages suitable for the various West African agro-ecological zones, as well as a brand-new directory of accredited **fertilizer quality control laboratories**.

We hope this redesigned and enriched version will help you to contribute to the sustainable and steady growth of the agricultural sector in West Africa, through the sound use of more quality, soil- and crop-specific fertilizers by the many smallholder farmers who are feeding West Africans.

Robin Wheeler, EnGRAIS COP

EnGRAIS PROJECT INTERMEDIATE RESULTS (IRS) AND PARTNERS

IR 1 Private Sector

Competitive, inclusive, **private sector**-led, regional fertilizer market strengthened, in partnership with **WAFA**

IR 2 Input packages

Comprehensive **input packages** developed and disseminated in cooperation with **CORAF**

IR 3 Policies

Fertilizer **policy** and regulatory systems across West Africa improved and harmonized in accordance with **ECOWAS** guidance

IR 4 Buy-ins

Mobilizing commitment and harmonizing engagement from key stakeholders across West Africa supported by **mission buy-ins**

OVERVIEW OF WEST AFRICAN COUNTRIES

ECOWAS – Economic Community of West African States

UEMOA – West African Economic and Monetary Union

CILSS – Permanent Interstate Committee for Drought Control in the Sahel

WAFA – West African Fertilizer Association

WEST AFRICA

Geographical area	Land 7,320,361 km²; Water 107,048 km² Total: 7,427,409 km²
Population	**421,013,100 (July 2020 est.)**
Labor force (in agriculture)	134,990,500 (average; 2017 est.)
GDP by sector (2017 est.)	30.6% (average) agriculture 20.3% (average) industry 49.2% (average) services
Land use (2011 est.)	47.7% agricultural land 24.7% forest 27.6% other

ECOWAS

Member states	**Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, Togo**
Geographical area	Land 5,030,461 km²; Water 82,248 km² Total: 5,112,709 km²
Population	400,130,268 (July 2020 est.)
Labor force	127,899,500 (2017 est.)
GDP by sector (2017 est.)	29.3% agriculture 20.1% industry 50.7% services
Land use (2011 est.)	48.8% agricultural land 27.4% forest 23.7% other

UEMOA

Member states	**Benin, Burkina Faso, Côte d'Ivoire, Guinea Bissau, Mali, Niger, Senegal, Togo**
Geographical area	Land 3,464,350 km²; Water 41,759 km² Total: 3,506,109 km²
Population	129,778,795 (July 2020 est.)
Labor force (Agriculture)	44,149,300 (average; 2017 est.)
GDP by sector (2017 est.)	32.0% agriculture 21.3% industry 46.8% services
Land use (2011 est.)	46.1% agricultural land 25.9% forest 28.1% other

BENIN

Capital & major city ..... **Porto-Novo**, Cotonou (seat of government)
Geographical area ..... Land 110,622 km^2; Water 2,000 km^2
Total: 112,622 km^2
Population ..... 12,864,634 (July 2020 est.)
Labor force ..... 3.662 million (2007 est.)
GDP real growth rate ..... 2015: 2.1% – 2016: 4.0% – 2017: 5.6%
GDP by sector (2017 est.) ..... 26.1% agriculture
22.8% industry
51.1% services
Major agricultural products ..... **Cotton, maize, cassava (manioc, tapioca), yams, beans, palm oil, groundnuts, cashews, livestock**
Major industries ..... Textiles, food processing, construction materials, cement
Land use (2011 est.) ..... 31.3% agricultural land
40% forest
28.7% other

BURKINA FASO

Capital & major city ..... **Ouagadougou**, Bobo-Dioulasso
Geographical area ..... Land 273,800 km^2; Water 400 km^2
Total: 274,200 km^2
Population ..... 20,835,401 (July 2020 est.)
Labor force ..... 8.501 million (2016 est.)
GDP real growth rate ..... 2015: 3.9% – 2016: 5.9% – 2017: 6.4%
GDP by sector (2017 est.) ..... 31.0% agriculture
23.9% industry
44.9% services
Major agricultural products ..... **Cotton, groundnuts, shea nuts, sesame, sorghum, millet, maize, rice, livestock**
Major industries ..... Cotton lint, beverages, agricultural processing, soap, cigarettes, textiles, gold
Land use (2011 est.) ..... 44.2% (2016 est.) agricultural land
19.3% (2016 est.) forest
36.5% (2016 est.) other

CAPE VERDE

Capital & major city ..... **Praia**, Mindelo
Geographical area ..... Land 4,033 km^2; Water – km^2
Total: 4,033 km^2
Population ..... 583,255 (July 2020 est.)
Labor force ..... 196,100 (2007 est.)
GDP real growth rate ..... 2015: 1.0% – 2016: 4.7% – 2017: 4.0%
GDP by sector (2017 est.) ..... 8.9% agriculture
17.5% industry
73.7% services
Major agricultural products ..... **Bananas, maize, beans, sweet potatoes, sugarcane, coffee, groundnuts, fish**
Major industries ..... Food and beverages, fish processing, shoes and garments, salt mining, ship repair
Land use (2011 est.) ..... 18.6% agricultural land
21% forest
60.4% other

CHAD

Capital & major city ..... **N'Djamena**, Moundou
Geographical area ..... Land 1,259,200 km^2; Water 24,800 km^2
Total: 1,284,000 km^2
Population ..... 16,877,357 (July 2020 est.)
Labor force ..... 5.654 million (2017 est.)
GDP real growth rate ..... 2015: 1.8% – 2016: -6.4% – 2017: -3.1%
GDP by sector (2017 est.) ..... 52.3% agriculture
14.7% industry
33.1% services
Major agricultural products ..... **Cotton, sorghum, millet, groundnuts, sesame, maize, rice, potatoes, onions, cassava (manioc, tapioca), cattle, sheep, goats, camels**
Major industries ..... Oil, cotton textiles, brewing, natron (sodium carbonate), soap, cigarettes, construction materials
Land use (2011 est.) ..... 39.6% agricultural land
9.1% forest
51.3% other

CÔTE D'IVOIRE

Capital & major city ..... **Yamoussoukro**, Abidjan
Geographical area ..... Land 318,003 km^2; Water 4,460 km^2
Total: 322,463 km^2
Population ..... 27,481,086 (July 2020 est.)
Labor force ..... 8.747 million (2017 est.)
GDP real growth rate ..... 2015: 8.8% – 2016: 8.3% – 2017: 7.8%
GDP by sector (2017 est.) ..... 20.1% agriculture
26.6% industry
53.3% services
Major agricultural products ..... **Coffee, cocoa beans, bananas, palm kernels, maize, rice, cassava (manioc, tapioca), sweet potatoes, sugar, cotton, rubber, timber**
Major industries ..... Foodstuffs, beverages, wood products, oil refining, gold mining, truck and bus assembly, textiles, fertilizer, building materials, electricity
Land use (2011 est.) ..... 64.8% agricultural land
32.7% forest
2.5% other

GAMBIA

Capital & major city ..... **Banjul**, Serekunda
Geographical area ..... Land 10,120 km^2; Water 1,180 km^2
Total: 11,300 km^2
Population ..... 2,173,999 (July 2020 est.)
Labor force ..... 777,100 (2007 est.)
GDP real growth rate ..... 2015: 5.9% – 2016: 0.4% – 2017: 4.6%
GDP by sector (2017 est.) ..... 20.4% agriculture
14.2% industry
65.4% services
Major agricultural products ..... **Rice, millet, sorghum, groundnuts, maize, sesame, cassava (manioc, tapioca), palm kernels, cattle, sheep, goats**
Major industries ..... Peanuts, fish, hides, tourism, beverages, agricultural machinery assembly, woodworking, metalworking, clothing
Land use (2011 est.) ..... 56.1% agricultural land
43.9% forest
0% other

GHANA

Capital & major city	**Accra**, Kumasi
Geographical area	Land 227,533 km^2; Water 11,000 km^2 Total: 238,533 km^2
Population	29,340,248 (July 2020 est.)
Labor force	12.49 million (2017 est.)
GDP real growth rate	2015: 3.8% – 2016: 3.7% – 2017: 8.4%
GDP by sector (2017 est.)	18.3% agriculture 24.5% industry 57.2% services
Major agricultural products	**Cocoa, rice, cassava (manioc, tapioca), groundnuts, maize, shea nuts, bananas, timber**
Major industries	Mining, lumbering, light manufacturing, aluminum smelting, food processing, cement, small commercial ship building, petroleum
Land use (2011 est.)	69.1% agricultural land 21.2% forest 9.7% other

GUINEA BISSAU

Capital & major city	**Bissau**, Bafata
Geographical area	Land 28,120 km^2; Water 8,005 km^2 Total: 36,125 km^2
Population	1,927,104 (July 2020 est.)
Labor force	731,300 (2013 est.)
GDP real growth rate	2015: 6.1% – 2016: 6.3% – 2017: 5.9%
GDP by sector (2017 est.)	50.0% agriculture 13.1% industry 36.9% services
Major agricultural products	**Rice, maize, beans, cassava (manioc, tapioca), cashew nuts, groundnuts, palm kernels, cotto, timber, fish**
Major industries	Agricultural products processing, beer, soft drinks
Land use (2011 est.)	44.8% agricultural land 55.2% forest 0% other

GUINEA

Capital & major city	**Conakry**, Camayenne
Geographical area	Land 245,717 km^2; Water 140 km^2 Total: 245,857 km^2
Population	12,527,440 (July 2020 est.)
Labor force	5.558 million (2017 est.)
GDP real growth rate	2015: 3.8% – 2016: 10.5% – 2017: 8.2%
GDP by sector (2017 est.)	19.8% agriculture 32.1% industry 48.1% services
Major agricultural products	**Rice, coffee, pineapples, mangoes, palm kernels, cocoa, cassava (manioc, tapioca), bananas, potatoes, sweet potatoes, cattle, sheep, goats, timber**
Major industries	Bauxite, gold, diamonds, iron ore, light manufacturing, agricultural processing
Land use (2011 est.)	58.1% agricultural land 26.5% forest 15.4% other

LIBERIA

Capital & major city	**Monrovia**, Gbarnga
Geographical area	Land 96,320 km^2; Water 15,049 km^2 Total: 111,369 km^2
Population	5,073,296 (July 2020 est.)
Labor force	1.677 million (2017 est.)
GDP real growth rate	2015: 0.0% – 2016: -1.6% – 2017: 2.5%
GDP by sector (2017 est.)	34.0% agriculture 13.8% industry 52.2% services
Major agricultural products	**Rubber, coffee, cocoa, rice, cassava (manioc, tapioca), palm oil, sugarcane, bananas; sheep, goats, timber**
Major industries	Mining (iron ore and gold), rubber processing, palm oil processing, diamonds
Land use (2011 est.)	28.1% agricultural land 44.6% forest 27.3% other

MALI

Capital & major city	**Bamako**, Sikasso
Geographical area	Land 1,220,190 km2;Water 20,002 km2 Total: 1,240,192 km2
Population	19,553,397 (July 2020 est.)
Labor force	6.447 million (2017 est.)
GDP real growth rate	2015: 6.2% – 2016: 5.8% – 2017: 5.4%
GDP by sector (2017 est.)	41.8% agriculture 18.1% industry 40.5% services
Major agricultural products	**Cotton, millet, rice, maize, vegetables, groundnuts, cattle, sheep, goats**
Major industries	Food processing, construction, phosphate and gold mining
Land use (2011 est.)	34.1% agricultural land 10.2% forest 55.7% other

MAURITANIA

Capital & major city	**Nouakchott**, Nouadhibou
Geographical area	Land 1,030,700 km^2; Water – km^2 Total: 1,030,700 km^2
Population	4,005,475 (July 2020 est.)
Labor force	1.437 million (2017 est.)
GDP real growth rate	2015: 0.4% – 2016: 1.8% – 2017: 3.5%
GDP by sector (2017 est.)	27.8% agriculture 29.3% industry 42.9% services
Major agricultural products	**Dates, millet, sorghum, rice, maize, cattle, camels, sheep**
Major industries	Fish processing, oil production, mining (iron ore, gold, copper)
Land use (2011 est.)	38.5% agricultural land 0.2% forest 61.3% other

NIGER

Capital & major city	**Niamey**, Zinder
Geographical area	Land 1,266,700 km²; Water 300 km² Total: 1,267,000 km²
Population	22,772,361 (July 2020 est.)
Labor force	6.5 million (2017 est.)
GDP real growth rate	2015: 4.3% – 2016: 4.9% – 2017: 4.9%
GDP by sector (2017 est.)	41.6% agriculture 19.5% industry 38.7% services
Major agricultural products	**Cowpeas, cotton, groundnuts, millet, sorghum, cassava (manioc, tapioca), rice, cattle, sheep, goats, camels, donkeys, horses, poultry**
Major industries	Uranium mining, petroleum, cement, brick, soap, textiles, food processing, chemicals, slaughterhouses
Land use (2011 est.)	35.1% agricultural land 1% forest 63.9% other

NIGERIA

Capital & major city	**Abuja**, Lagos
Geographical area	Land 910,768 km²; Water 13,000 km² Total: 923,768 km²
Population	214,028,302 (July 2020 est.)
Labor force	60.08 million (2017 est.)
GDP real growth rate	2015: 2.7% – 2016: -1.6% – 2017: 0.8%
GDP by sector (2017 est.)	21.1% (2016 est.) agriculture 22.5% industry 56.4% services
Major agricultural products	**Cocoa, groundnuts, cotton, palm oil, maize, rice, sorghum, millet, cassava (manioc, tapioca), yams, rubber, cattle, sheep, goats, pigs, timber, fish**
Major industries	Crude oil, coal, tin, columbite, rubber products, wood, hides and skins, textiles, cement and other construction materials, food products, footwear, chemicals, fertilizer, printing, ceramics, steel
Land use (2011 est.)	78% agricultural land 9.5% forest 12.5% other

SENEGAL

Capital & major city	**Dakar**, Pikine
Geographical area	Land 192,530 km²; Water 4,192 km² Total: 196,722 km²
Population	15,736,368 (July 2020 est.)
Labor force	6.966 million (2017 est.)
GDP real growth rate	2015: 6.4% – 2016: 6.2% – 2017: 7.2%
GDP by sector (2017 est.)	16.9% agriculture 24.3% industry 58.8% services
Major agricultural products	**Groundnuts, millet,maize, sorghum, rice, cotton, tomatoes, green vegetables, cattle, poultry, pigs, fish**
Major industries	Agricultural and fish processing, phosphate mining, fertilizer production, petroleum refining, zircon and gold mining, construction materials, ship construction and repair
Land use (2011 est.)	46.8% agricultural land 43.8% forest 9.4% other

SIERRA LEONE

Capital & major city	**Freetown**, Bo
Geographical area	Land 71,620 km²; Water 120 km² Total: 71,740 km²
Population	6,624,933 (July 2020 est.)
Labor force	2.972 million (2017 est.)
GDP real growth rate	2015: -20.5% – 2016: 6.3% – 2017: 3.7%
GDP by sector (2017 est.)	60.7% (2016 est.) agriculture 6.5% industry 32.9% services
Major agricultural products	**Rice, coffee, cocoa, palm kernels, palm oil, groundnuts, cashews, poultry, cattle, sheep, pigs, fish**
Major industries	Diamond mining, iron ore, rutile and bauxite mining, small-scale manufacturing (beverages, textiles, footwear)
Land use (2011 est.)	56.2% agricultural land 37.5% forest 6.3% other

TOGO

Capital & major city	**Lomé**, Sokodé
Geographical area	Land 54,385 km²; Water 2,400 km² Total: 56,785 km²
Population	8,608,444 (July 2020 est.)
Labor force	2.595 million (2007 est.)
GDP real growth rate	2015: 5.7% – 2016: 5.1% – 2017: 4.4%
GDP by sector (2017 est.)	28.8% agriculture 21.8% industry 49.8% services
Major agricultural products	**Coffee, cocoa, cotton, yams, cassava (manioc, tapioca), maize, beans, rice, millet, sorghum, livestock, fish**
Major industries	Phosphate mining, agricultural processing, cement, handicrafts, textiles, beverages
Land use (2011 est.)	67.4% agricultural land 4.9% forest 27.7% other

Source: CIA (World Factbook) and worldpopulationreview.com

2. FERTILIZER MARKETS

Photo: Felix Deyegbe

FERTILIZER MARKETS BY THE NUMBERS

The International Fertilizer Development Center (IFDC), through the AfricaFertilizer.org (AFO) initiative, has been working with the CountrySTAT program of the Food and Agriculture Organization of the United Nations, over the past eight years, to produce and disseminate, reliable and up-to-date official statistics on fertilizers produced, imported, exported and consumed in countries within the sub-Saharan Africa.

In 2012, Fertilizer Technical Working Groups (FTWG) were established in 11 sub-Saharan African countries. These working groups have been responsible for reviewing country-level data and presenting statistics results tables for validation by the National Technical Working Groups before such data are published.

In West Africa, there is a partnership between AFO and the West Africa Fertilizer Association (WAFA) which 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.

The Fertilizer Technical Working Group through the facilitation of AFO and WAFA meets once a year for at least 2 days to validate fertilizer statistics for each country.

Above: Fred Gyasi leading a discussion during a joint FTWG of Ghana and Nigeria at Prampram, Ghana in March 2019.

Opposite page, top: Country group presentation of FTWG members in Bobo Dioulasso, Burkina Faso, March 2019.

Opposite, lower left: Presentation of fertilizer statistics overview by Fred Gyasi during the FTWG at Elmina, Ghana in February 2020.

AfricaFertilizer.org

TECHNICAL REPORT

2019 Fertilizer Statistics Validation Workshops
Fertilizer Technical Working Groups (FTWG)
Burkina Faso | Cote d'Ivoire | Mali | Senegal

Burkina Faso FTWG

Cote d'Ivoire FTWG

Mali FTWG

Senegal FTWG

Compilation of fertilizer statistics validated by FTWGs
Burkina Faso, Côte d'Ivoire, Mali, Senegal
October 2020

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

IFDC ifa

AfricaFertilizer.org

TECHNICAL REPORT

Fertilizer Technical Working Groups
2019 Fertilizer Statistics Validation Workshop
&
Visualizing Insights on Fertilizer for African Agriculture (VIFAA) Kick – Off Meeting
Ghana

uary 11 – 13, 2020, Elmina, Gh

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AfricaFertilizer.org

TECHNICAL REPORT

Fertilizer Technical Working Groups
2019 Fertilizer Statistics Validation Workshop
Nigeria

March 4 – 5, 2020, Abuja, Nigeria

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

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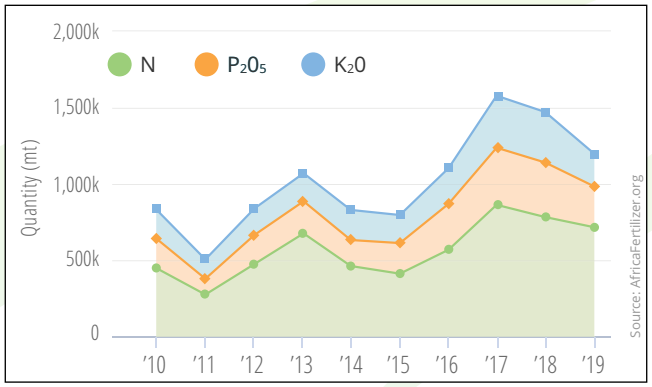
FERTILIZER FACTSHEET 2020 REGIONAL OVERVIEW

AfricaFertilizer.org

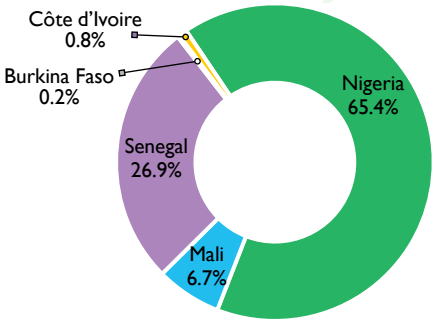
West African Fertilizer Association
Association Ouest-Africaine de l'Engrais

FERTILIZER CONSUMPTION IN NUTRIENTS, 2010-2019

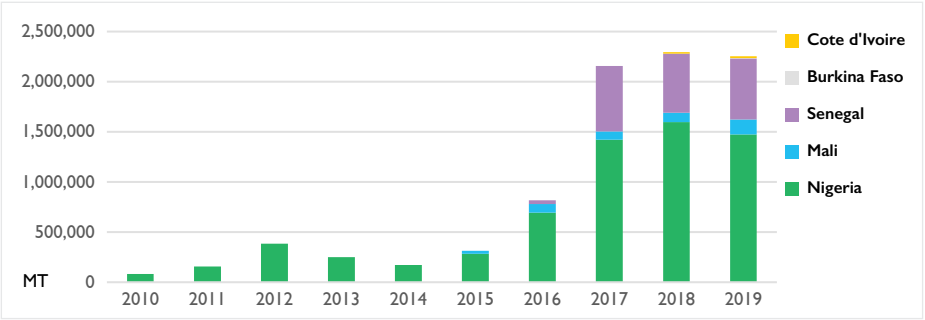


SIX COUNTRIES IN THE WEST AFRICA SUB-REGION

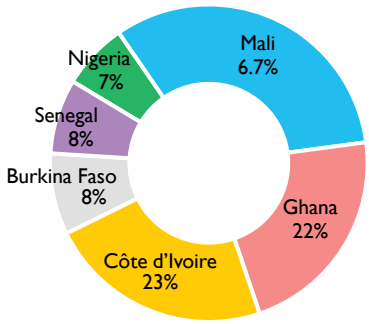
FERTILIZER PRODUCTION 2019



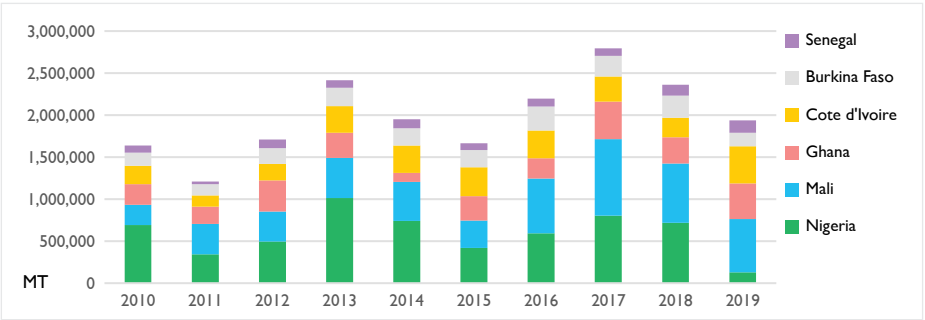
FERTILIZER PRODUCTION – 2010-2019



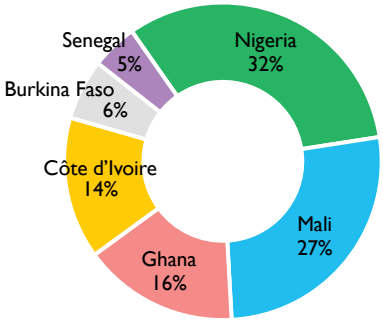
FERTILIZER IMPORTS 2019



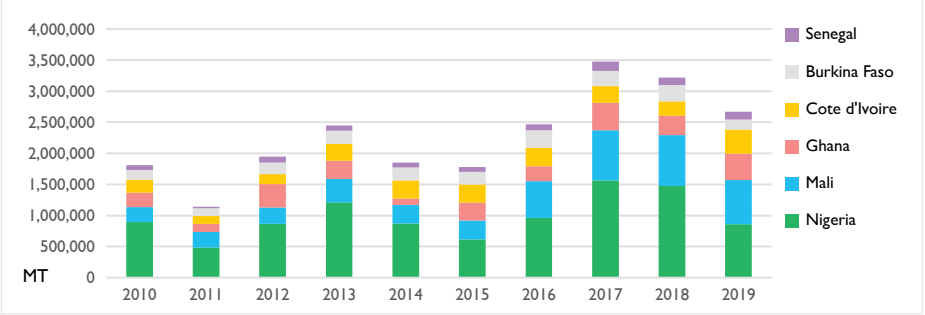
FERTILIZER IMPORTS – 2010-2019



APPARENT CONSUMPTION 2019



FERTILIZER APPARENT CONSUMPTION – 2010-2019



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INTERNATIONAL FERTILIZER ASSOCIATION

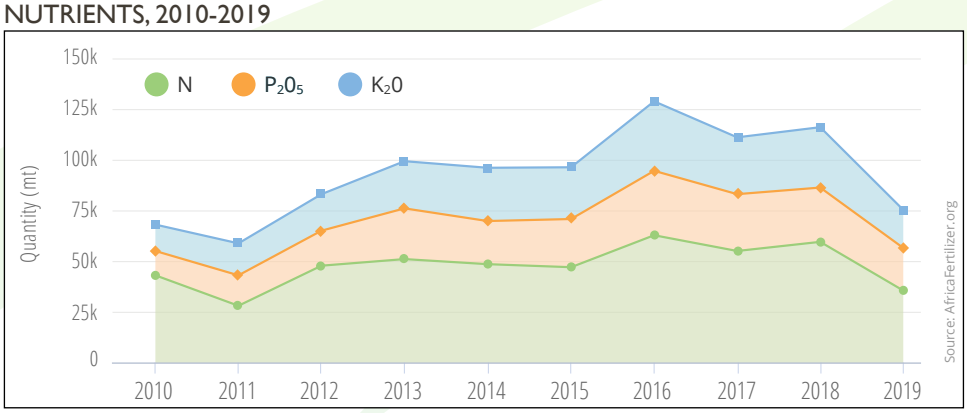
For more info: AfricaFertilizer.org and WAFAfertilizer.org

FERTILIZER FACTSHEET 2020 BURKINA FASO

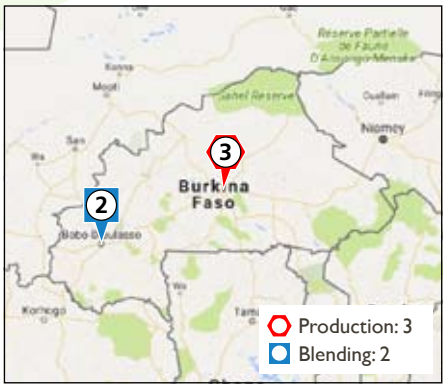
AfricaFertilizer.org

West African Fertilizer Association
Association Ouest-Africaine de l'Engrais

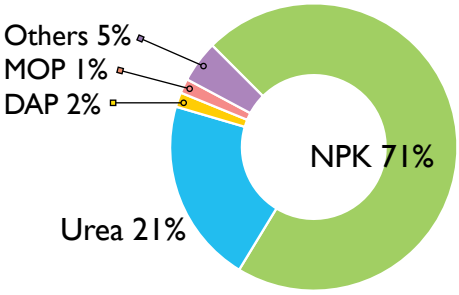
FERTILIZER CONSUMPTION IN NUTRIENTS, 2010-2019



FERTILIZER PRODUCTION & BLENDING PLANT SITES



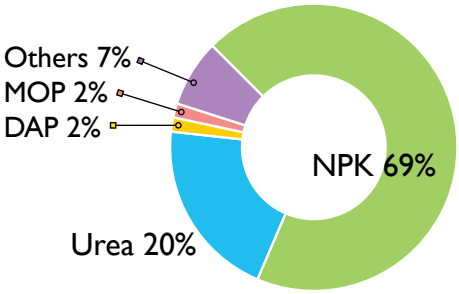
FERTILIZER IMPORTS 2019



FERTILIZER IMPORTS 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NPK	55,716	69,207	104,965	138,608	84,239	105,013	178,526	171,473	165,558	114,215
Urea	72,868	36,404	64,783	57,332	63,298	55,712	68,056	60,855	72,433	33,425
DAP	6,565	9,065	2,668	6,493	17,057	13,881	7,827	4,537	4,290	2,635
MOP	4,495	9,260	2,807	2,079	20,447	13,149	9,225	3,495	8,253	2,611
Others	17,667	7,432	12,224	14,611	21,582	20,420	19,606	5,217	13,014	7,537
Total	**157,311**	**131,367**	**187,448**	**219,122**	**206,623**	**208,175**	**283,241**	**245,576**	**263,548**	**160,423**

APPARENT CONSUMPTION 2019



FERTILIZER APPARENT CONSUMPTION 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NPK	55,574	69,864	101,965	138,443	84,199	105,013	178,526	171,473	165,553	113,315
Urea	70,893	32,004	64,668	57,332	63,298	55,712	68,056	60,855	72,313	33,425
DAP	6,565	9,065	2,668	6,493	17,057	13,881	7,827	4,537	4,290	2,634
MOP	4,495	8,910	2,807	2,079	20,447	13,149	9,225	3,495	8,253	2,611
Others	17,649	5,400	11,770	14,616	21,582	20,420	19,606	5,217	15,334	12,437
Total	**155,175**	**125,242**	**183,879**	**218,962**	**206,583**	**208,175**	**283,241**	**245,576**	**265,743**	**164,422**

DEMAND FOR FERTILIZER BY CROP AND SEASON

Sowing | Growing | Harvest | ◆ Fertilizer peak demand

Season	Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Major season (long rains)	Maize			◆	◆	◆	◆						
	Millet					◆	◆	◆	◆				
	Sorghum			◆	◆	◆	◆						
	Rice	◆	◆										◆
	Cotton					◆	◆	◆					

Source: FAO/GIEWS, FEWSNET

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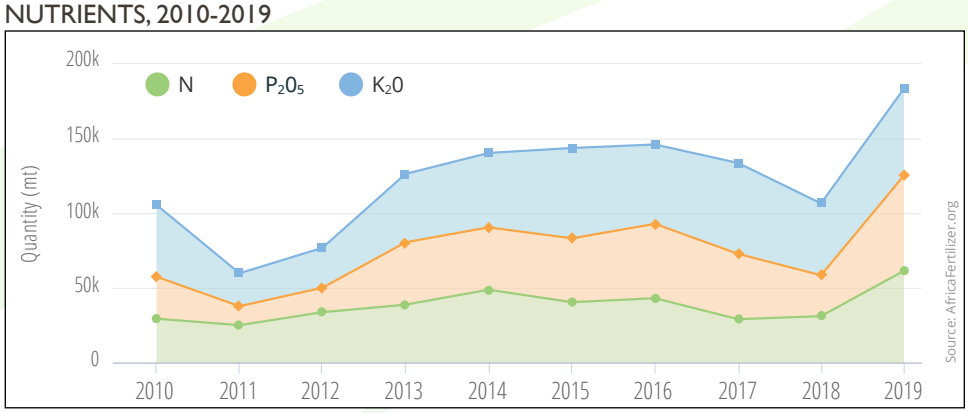
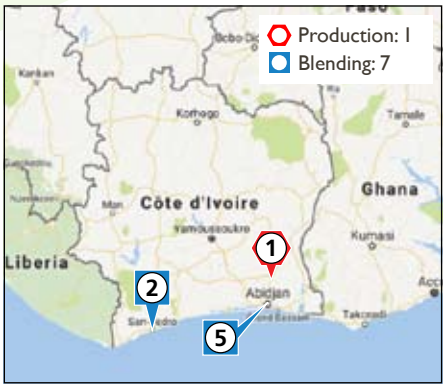
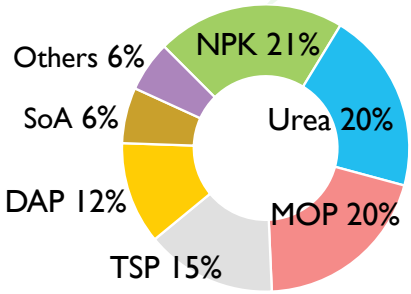
FERTILIZER CONSUMPTION IN NUTRIENTS, 2010-2019



FERTILIZER PRODUCTION & BLENDING PLANT SITES



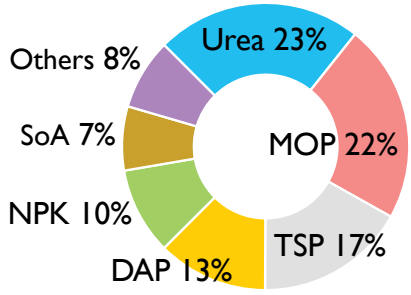
FERTILIZER IMPORTS 2019



FERTILIZER IMPORTS 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NPK	3,080	2,023	16,434	60,004	23,522	68,770	54,224	34,687	58,499	94,127
Urea	39,868	51,582	61,675	52,436	74,180	65,775	66,682	43,790	43,066	90,955
MOP	77,743	36,820	47,433	65,910	88,441	96,732	82,073	99,902	64,415	89,260
TSP	16,901	10,246	8,363	25,475	29,317	43,881	55,348	62,045	16,505	65,397
DAP	39,270	9,982	23,024	47,320	40,198	19,505	39,881	25,217	15,793	51,057
SoA	24,561	13,871	15,394	36,742	38,816	22,741	20,175	21,573	13,888	27,830
Others	15,517	12,313	24,192	33,041	29,444	24,410	13,937	15,709	20,131	25,220
Total	**216,940**	**136,837**	**196,514**	**320,929**	**323,918**	**341,813**	**332,320**	**302,924**	**232,298**	**443,847**

APPARENT CONSUMPTION 2019



FERTILIZER APPARENT CONSUMPTION 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Urea	37,579	44,949	55,310	44,566	68,428	55,850	59,157	42,269	39,698	89,615
MOP	77,239	35,860	39,460	64,607	77,958	91,993	80,401	97,312	62,671	86,539
TSP	15,690	10,246	8,363	25,475	29,285	43,853	55,348	62,039	16,505	65,397
DAP	39,208	9,882	23,024	47,218	33,459	19,160	39,298	24,953	15,761	48,047
NPK	-	42	6,074	4,034	15,948	30,482	30,353	4,697	49,302	37,840
SoA	24,496	13,107	15,391	36,252	38,691	22,258	20,170	19,424	13,888	27,830
Others	15,522	13,457	16,971	45,428	29,192	24,277	13,320	20,462	34,512	30,814
Total	**209,734**	**127,544**	**164,592**	**267,581**	**292,961**	**287,873**	**298,047**	**271,157**	**232,337**	**386,083**

DEMAND FOR FERTILIZER BY CROP AND SEASON

Sowing | Growing | Harvest | ◆ Fertilizer peak demand

Season	Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Major season (long rains)	Cotton (North)						◆	◆	◆				
	Cotton (Central)						◆	◆	◆				
	Cocoa (less than 3 years)				◆	◆			◆				
	Cocoa (Year 3 and more)				◆	◆		◆	◆				
	Oil palm (less than 3 years)			◆	◆					◆	◆		
	Oil palm (Year 3 and more)		◆	◆				◆			◆		
	Maize			◆	◆	◆							
	Rice					◆	◆	◆					
Minor season (short rains)	Cassava, Maize, Millet, Sorghum, Rice, Yam								◆	◆	◆		

Source: FAO/GIEWS, FEWSNET

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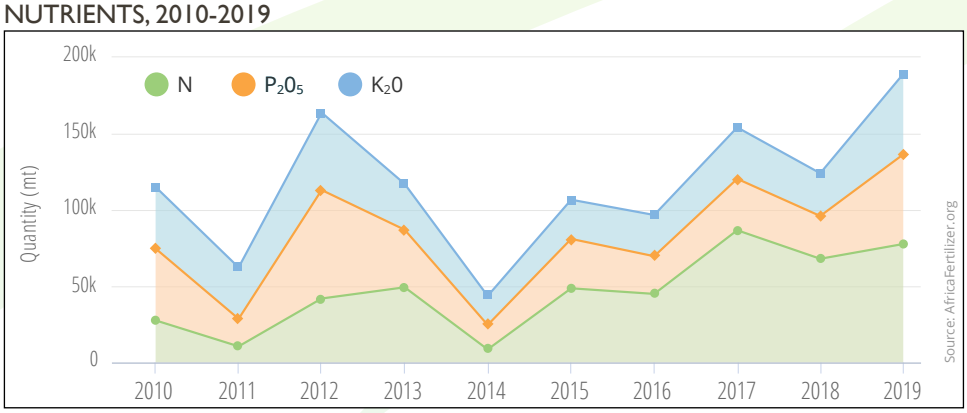
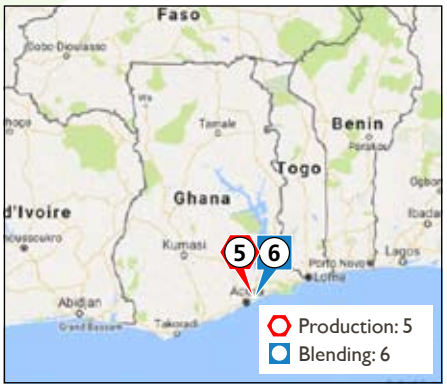
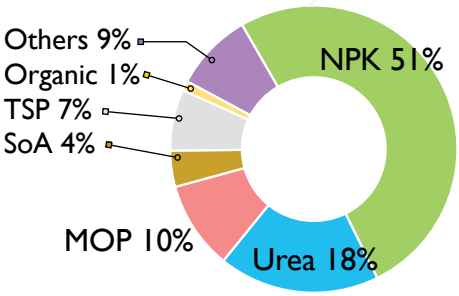
FERTILIZER CONSUMPTION IN NUTRIENTS, 2010-2019



FERTILIZER PRODUCTION & BLENDING PLANT SITES



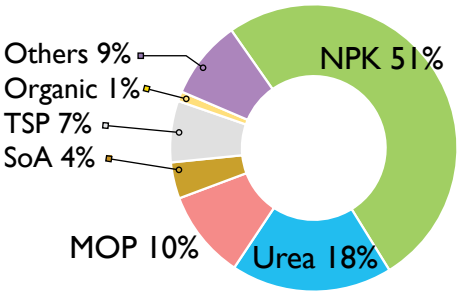
FERTILIZER IMPORTS 2019



FERTILIZER IMPORTS 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NPK	67,071	50,405	127,393	117,047	44,880	138,140	132,632	213,887	224,176	217,024
Urea	14,025	2,838	17,665	36,104	202	18,348	39,035	88,259	42,005	77,011
MOP	37,832	30,505	43,420	19,849	22,715	18,707	13,842	24,235	15,993	42,235
SoA	29,570	38,474	61,585	54,863	6,282	64,015	23,268	43,865	10,084	17,326
TSP	79,042	50,177	92,456	47,173	21,258	32,052	13,802	26,766	9,460	29,300
Organic	88	13	275	6,465	5,523	7,818	8,772	37,643	5,875	4,673
Others	18,288	24,905	30,971	16,414	10,223	11,077	8,532	9,582	7,564	37,542
Total	**245,916**	**197,317**	**373,765**	**297,915**	**111,083**	**290,156**	**239,883**	**444,236**	**315,157**	**425,110**

APPARENT CONSUMPTION 2019



FERTILIZER APPARENT CONSUMPTION 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
NPK	65,758	46,273	126,929	113,794	39,344	137,902	132,632	210,387	220,176	215,617
Urea	13,020	2,431	17,603	36,104	-	18,253	39,035	88,259	42,002	76,921
MOP	37,332	25,884	43,403	19,801	22,702	18,707	13,842	24,235	15,712	42,235
SoA	29,570	1,052	61,585	54,863	6,282	64,015	23,268	43,865	10,084	17,326
TSP	79,042	22,149	92,456	47,173	19,613	32,052	13,802	26,766	9,460	29,300
Organic	64	13	275	6,465	5,523	7,818	8,747	37,568	5,868	4,663
Others	18,191	26,649	30,951	16,136	10,223	11,077	8,532	9,582	7,564	37,542
Total	**242,978**	**124,451**	**373,202**	**294,336**	**103,688**	**289,822**	**239,858**	**440,661**	**310,866**	**423,603**

DEMAND FOR FERTILIZER BY CROP AND SEASON

Sowing | Growing | Harvest | ◆ Fertilizer peak demand

Season	Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Major season (long rains)	Cassava (first year)				◆	◆	◆						
	Cassava (second year)												
	Maize (North main)						◆	◆	◆				
	Maize (South main)			◆	◆	◆							
	Sorghum & Millet					◆	◆	◆	◆				
	Rice (North)					◆	◆	◆	◆				
	Rice (South)				◆	◆	◆						
	Yam	◆	◆	◆	◆								
Minor season (short rains)	Cassava, Maize, Millet, Sorghum, Rice, Yam							◆	◆	◆			

Source: FAO/GIEWS, FEWSNET

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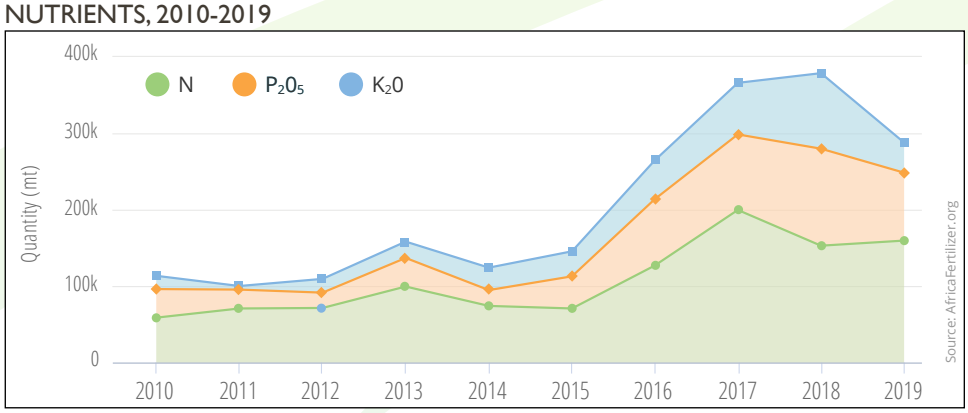
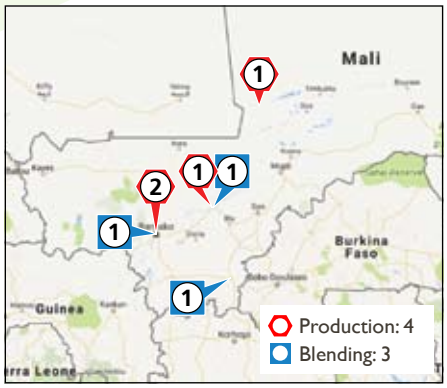
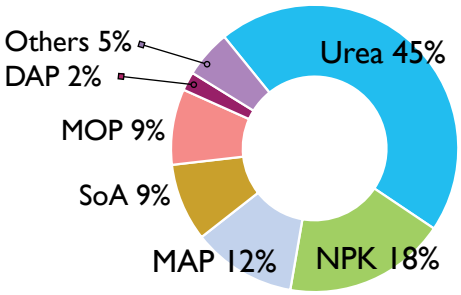
FERTILIZER CONSUMPTION IN NUTRIENTS, 2010-2019



FERTILIZER PRODUCTION & BLENDING PLANT SITES



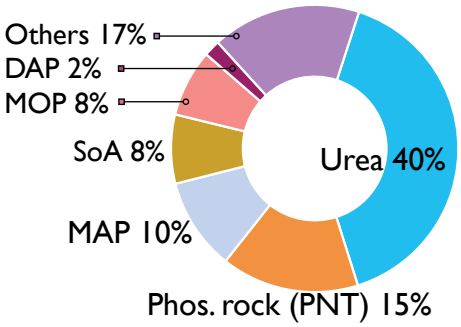
FERTILIZER IMPORTS 2019



FERTILIZER IMPORTS 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Urea	104,103	149,420	164,901	188,492	171,550	132,565	252,745	395,583	225,504	284,941
NPK	14,979	25,259	24,197	46,351	95,283	57,065	28,322	39,589	7,484	115,310
MAP	65,478	73,381	58,166	94,247	57,133	58,146	120,767	120,776	143,064	73,707
SoA	20,609	56,338	43,403	57,146	55,279	18,897	57,915	98,337	90,219	55,136
MOP	28,748	45,183	42,861	60,908	66,071	54,180	106,633	153,659	166,984	53,682
DAP	110	5,457	613	5,384	3,875	4,604	39,508	69,300	55,701	13,268
Others	6,724	7,270	22,744	23,434	11,835	2,378	45,686	33,280	16,790	33,759
Total	**240,750**	**362,307**	**356,885**	**475,962**	**461,027**	**327,835**	**651,575**	**910,524**	**705,746**	**629,804**

APPARENT CONSUMPTION 2019



FERTILIZER APPARENT CONSUMPTION 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Urea	104,037	124,015	137,334	169,514	128,963	131,562	219,405	354,014	225,414	284,746
PNT	-	-	-	-	-	-	36,755	40,403	45,000	110,120
MAP	65,478	39,155	29,750	64,778	28,587	58,146	87,427	96,112	143,064	73,707
SoA	20,609	42,282	15,708	40,844	23,290	18,897	47,759	74,722	90,219	55,136
MOP	28,748	7,756	25,256	34,513	43,082	54,180	82,905	110,995	163,934	53,682
DAP	110	5,457	613	5,384	3,875	4,354	39,448	59,918	84,305	13,028
Others	20,704	35,606	57,068	56,952	67,662	33,336	76,956	69,716	64,440	119,031
Total	**239,686**	**254,271**	**265,729**	**371,985**	**295,459**	**300,474**	**590,655**	**805,879**	**816,375**	**709,451**

DEMAND FOR FERTILIZER BY CROP AND SEASON

Sowing | Growing | Harvest | ◆ Fertilizer peak demand

Season	Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Major season (long rains)	Irrigated Rice	■	■	■	■					◆	◆	◆	◆
	Maize					◆	◆	◆	◆	■	■	■	■
	Millet					◆	◆	◆	◆	■	■	■	
	Rainfed Rice						◆	◆	◆	◆	◆	◆	■
	Sorghum					◆	◆	◆	■	■	■	■	
	Cotton					◆	◆	◆	■		■	■	

Source: FAO/GIEWS, FEWSNET

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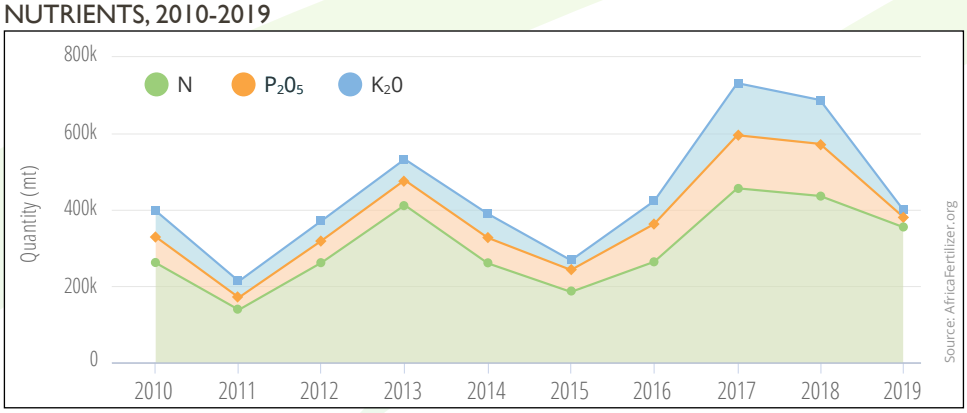
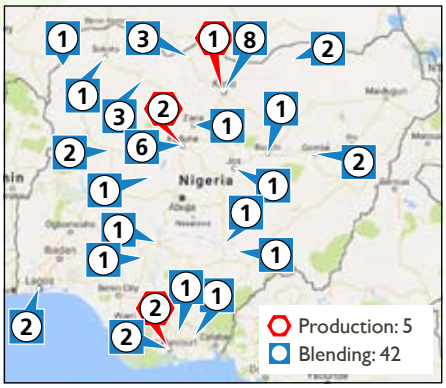
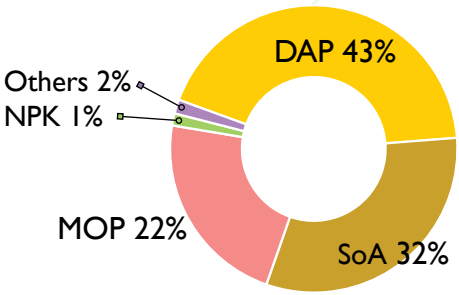
FERTILIZER CONSUMPTION IN NUTRIENTS, 2010-2019



FERTILIZER PRODUCTION & BLENDING PLANT SITES



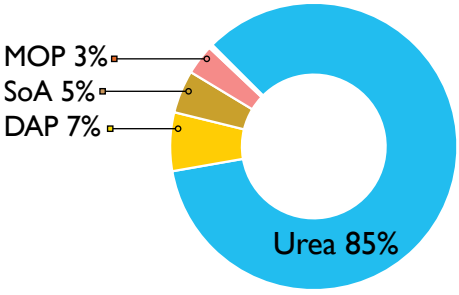
FERTILIZER IMPORTS 2019



FERTILIZER IMPORTS 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
DAP	-	-	-		-	5,500	5,250	102,770	92,956	56,800
SoA	25,347	132	11,438	12,284	2,321	10,483	27,450	40,248	17,700	41,533
MOP	16,379	19,853	34,350	13,532	13,721	408	3,683	121,846	95,373	29,275
NPK	365,914	177,476	230,446	294,980	344,879	165,684	380,455	399,949	351,821	1,785
NP com.	47,241	-	-	-	36,164	47,986	115,645	96,984	111,500	-
Urea	232,658	118,363	100,434	598,616	291,966	120,346	21,013	12	-	-
Others	6,132	27,915	116,979	94,547	53,167	67,569	40,498	42,284	48,101	2,064
Total	**693,672**	**343,739**	**493,647**	**1,013,959**	**742,216**	**417,976**	**593,994**	**804,093**	**717,450**	**131,458**

APPARENT CONSUMPTION 2019



FERTILIZER APPARENT CONSUMPTION 2010-2010 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Urea	420,526	242,761	451,394	765,731	423,966	319,656	386,383	760,734	758,499	730,151
DAP	-	-	-	-	-	5,500	5,250	102,770	92,956	56,800
SoA	25,358	27	11,109	12,301	2,321	10,483	27,450	40,248	17,700	41,533
MOP	16,382	20,779	34,479	13,921	13,721	408	3,683	121,846	95,373	29,275
NPK	366,114	178,320	345,953	270,919	344,879	165,684	380,455	399,949	351,821	1,785
SSP	11,088	32,474	13,910	37,682	571	16,751	16,599	16,550	19,854	1,507
NP com.	47,301	0	6,612	87,988	68,535	47,986	115,845	96,984	111,500	-
Others	6,107	7,280	146	25,417	20,225	51,429	23,699	25,735	28,247	557
Total	**892,876**	**481,641**	**863,605**	**1,213,959**	**874,216**	**617,897**	**959,364**	**1,564,816**	**1,475,950**	**861,609**

DEMAND FOR FERTILIZER BY CROP AND SEASON

Sowing | Growing | Harvest | ◆ Fertilizer peak demand

Season	Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Major season (long rains)	Cassava (South)					◆	◆	◆					
	Maize (North main)					◆	◆	◆					
	Maize (South main)			◆	◆	◆							
	Millet						◆	◆					
	Sorghum				◆	◆	◆						
	Rice				◆	◆	◆						
	Yam		◆	◆	◆								
Minor season (short rains)	Cassava, Maize, Millet, Sorghum, Rice, Yam	◆	◆									◆	◆

Source: FAO/GIEWS, FEWSNET

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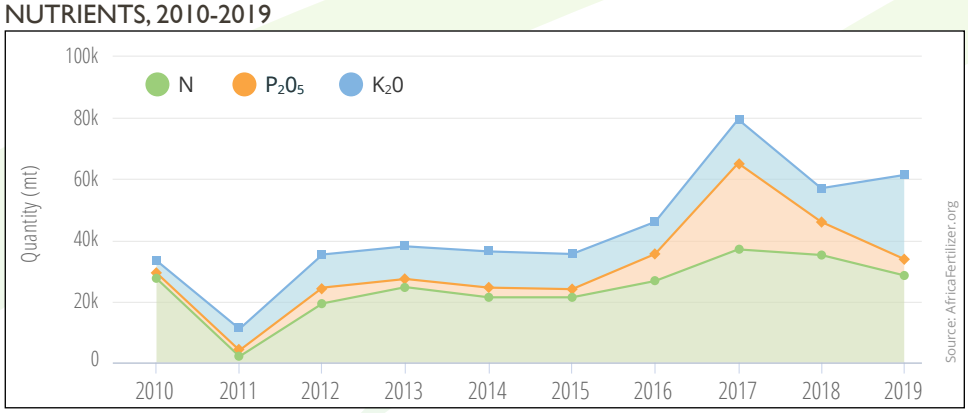
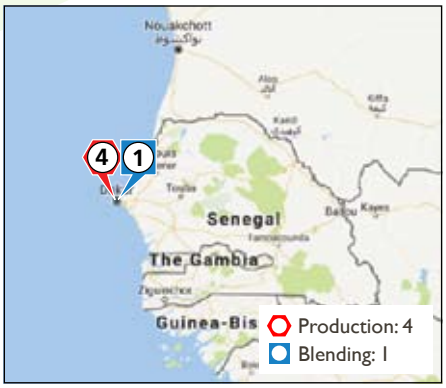
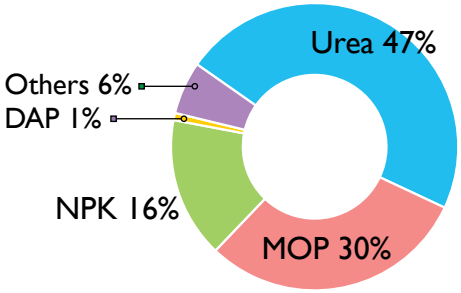
FERTILIZER CONSUMPTION IN NUTRIENTS, 2010-2019



FERTILIZER PRODUCTION & BLENDING PLANT SITES



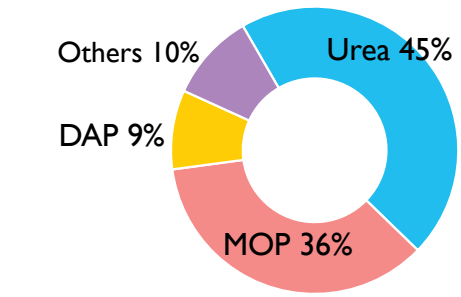
FERTILIZER IMPORTS 2019



FERTILIZER IMPORTS 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Urea	64,291	4,751	55,239	48,509	54,406	41,295	48,608	56,921	70,796	69,757
MOP	1,775	7,458	8,697	12,403	13,640	12,580	14,412	22,939	13,444	44,538
NPK	10,410	16,806	33,176	18,664	27,873	16,428	22,008	5,304	39,000	23,385
DAP	1,766	2,024	1,354	2,261	6,011	2,313	8,263	-	500	1,187
Others	6,199	3,343	4,169	4,301	5,058	6,218	2,682	2,259	4,469	8,767
Total	**84,440**	**34,382**	**102,636**	**86,138**	**106,989**	**78,835**	**95,974**	**87,423**	**128,209**	**147,634**

APPARENT CONSUMPTION 2019



FERTILIZER APPARENT CONSUMPTION 2010-2019 (MT)

Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Urea	54,954	-	52,031	47,587	40,855	40,522	48,607	56,332	63,500	56,959
MOP	1,775	7,458	8,697	12,398	13,640	12,580	14,412	22,939	13,444	44,517
DAP	-	-	-	-	-	-	13,514	61,081	18,146	11,148
NPK	10,324	12,338	32,678	18,180	17,330	16,068	13,376	-	17,626	-
Others	5,633	2,759	4,068	3,582	4,378	6,129	3,340	3,759	6,350	12,338
Total	**72,686**	**22,555**	**97,474**	**81,747**	**76,203**	**75,299**	**93,248**	**144,111**	**119,065**	**124,962**

DEMAND FOR FERTILIZER BY CROP AND SEASON

Sowing | Growing | Harvest | ◆ Fertilizer peak demand

Season	Crop	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Major season (long rains)	Groundnut						◆	◆	◆	◆			
	Maize						◆	◆	◆				
	Millet & Sorghum						◆	◆	◆				
	Rice						◆	◆	◆	◆	◆		
	Cotton					◆	◆	◆					
Minor season (short rains)	Groundnut, Maize, Millet, Rice					◆	◆	◆	◆				

Source: FAO/GIEWS, FEWSNET

IFDC Developing Agriculture from the Ground Up

ifa INTERNATIONAL FERTILIZER ASSOCIATION

For more info: AfricaFertilizer.org and WAFAfertilizer.org

3. FERTILIZER PRODUCTION

Photo: Patrice Annequin

FERTILIZER PRODUCTION AND BLENDING IN WEST AFRICA

Since 2015, IFDC has been listing fertilizer plants in operation in sub-Saharan Africa. The fertilizer industry details are collected through a registration survey undertaken by AFO, with support from the Feed the Future EnGRAIS project and WAFA for the West African chapter reported in this publication. The details are obtained directly from the companies by use of questionnaires, from company websites, and from secondary data from various fertilizer-oriented institutions.

This section is segmented into 4 categories:

- **Production plants:** Those which undertake mining and/or some type of chemical reaction to produce fertilizer. Typically, these are large specific product plants such as urea, ammonia, DAP, MAP, TSP, SSP, MOP, SOP, or NPK compound fertilizers.
- **Blending plants:** Those which mix macro- and micro-nutrient products to obtain a final product ready to use.
- **Future projects:** Those either under construction or likely to be operational within the next five years.

At the beginning of 2020, a total of 87 fertilizer plants (+21 from the 2019 edition) are known to be operational in West Africa. They include:

- **7** fertilizer production plants (+1), including 2 producing nitrogen-based fertilizers and 5 producing phosphate-based fertilizers
- **1** micronutrient production plant (unchanged)
- **1** lime supplements production plant
- **15** organic fertilizer plants (+4)
- **63** blending facilities (+15)
- **22** future projects (-7)

New: In this edition, we have added the first register of 23 accredited **Soil Testing and Fertilizer Quality Control Laboratories** in operation in West Africa. These laboratories can run tests on fertilizers, soil, water, or plants. *See page 76.*

FERTILIZER PRODUCTION PLANTS

NITROGEN PRODUCTION

Notore Chemicals Industries Ltd and Indorama Eleme Fertilizers & Chemicals Ltd, both in Rivers State, Nigeria, are currently the only plants producing urea and ammonia in West Africa, awaiting Dangote plant in Lagos State to come on stream in the course of 2021.

PHOSPHATE PRODUCTION

Several phosphate mines in West Africa extract phosphate rock but process the phosphate at a different level.

Industries Chimiques du Sénégal (ICS/Indorama) processes phosphate rock to phosphoric acid and uses that in their plant in Mbao to produce DAP and TSP.

Toguna Agro Industries grinds and granulates the natural phosphate of Tilemsi for West Africa regional use, and *Société Nouvelle des Phosphates du Togo* (SNPT) exports all their production of phosphate rock abroad. Other phosphate rock extraction activities are done by *Société d'Études et de Réalisation des Phosphates de Matam* (SERPM) in Matam, Senegal.

POTASH PRODUCTION

There are no current manufacturers of potash in West Africa but there are 2 potash deposits that have been identified and are being considered for development.

Note: Capacities listed are nominal and not operational capacities.

More detailed information on all plants listed in this register can be found on the AfricaFertilizer.org official website: https://africafertilizer.org/production/

ABBREVIATIONS

Metric tons per hour (**mtph**) – day (**mtpd**) – year (**mtpy**)

QUICK REFERENCE

PRODUCTION – NITROGEN

No.	Country	Plant Site	Company	Product	Commissioned
1	Nigeria	Onne, Rivers State	Notore Chemical Industries Plc	Urea	1988
2	Nigeria	Port Harcourt	Indorama Eleme Fertilizers & Chemicals Ltd	Urea	2016

PRODUCTION – SOIL SUPPLEMENTS AND MICRO-NUTRIENTS

No.	Country	Plant Site	Company	Product	Commissioned
1	Ghana	Takoradi	Carmeuse Lime Products GH Ltd	Lime supplements	1993
2	Nigeria	Kaduna	Cybernetics Nigeria Ltd	Micronutrients	1985

PRODUCTION – ORGANIC FERTILIZERS

No.	Country	Plant Site	Company	Product	Commissioned
1	Benin	Allada	Bio Phyto	Organic fertilizers	2013
2	Burkina Faso	Ouagadougou	Arom-H/Sol Fertile	Organic fertilizers	2014
3	Burkina Faso	Ouagadougou	Faso Biogaz	Biodigester (2,500 m^3)	2015
4	Côte d'Ivoire	Adzopé	Éléphant Vert Côte d'Ivoire	Industrial composting	2014
5	Ghana	Accra (Jamestown)	Ga Mashie Aerobic Compost	Organic compost	2013
6	Ghana	Adjen Kotoku	Accra Compost & Recycling Plant (ACARP)	Organic compost	2012
7	Ghana	Ashaiman	Safisana	Anaerobic digester	2016
8	Ghana	Tema (Borteyman)	JVL Fortifier Compost	Organic compost	2017
9	Mali	Bamako	Orgafert	Organic fertilizers	2018
10	Mali	Bamako	PROFEBA	Organic fertilizers	2017
11	Mali	Ségou	Éléphant Vert Mali	Organic fertilizers	2018
12	Nigeria	Kaduna	Dharul Hijrah Fertilizer Co. LTD	Organic fertilizers	2016
13	Nigeria	Kano	Excel Standards LTD	Compound fertilizer granulation plant & bulk blending plant	2013
14	Senegal	Dakar	Biotoss	Organic fertilizers	2017
15	Senegal	Dakar	Éléphant Vert Sénégal	Composting platform	2019

PRODUCTION – PHOSPHATES

No.	Country	Plant Site	Company	Product	Commissioned
1	Burkina Faso	Diapaga	Société d'Exploitation des Phosphates du Burkina (SEPB)	Natural Phosphate Rock	2012
2	Mali	Tilemsi	Toguna Agro Industries – Tilemsi	Natural Phosphate Rock	2009
3	Senegal	Dakar	Industries Chimiques du Sénégal (ICS)	Phosphate Rock, Phosphoric Acid, DAP, NPK, Gypsum	1976
4	Senegal	Dakar	Société d'Études et de Réalisation des Phosphates (SERPM)	Phosphate Rock	2007
5	Togo	Kpémé	Société Nouvelle des Phosphates du Togo (SNPT)	Phosphate Rock	1961

BLENDING

No.	Country	Plant Site (Town/State)	Company	Year of Establishment
1	Burkina Faso	Bobo Dioulasso	Société de Commercialisation de Production Agricole et de Marchande (CIPAM SA)	2003
2	Burkina Faso	Bobo Dioulasso	Industries Chimiques Fertilisants d'Afrique (IFCA)	2016
3	Côte d'Ivoire	Abidjan	Agro West Africa – Abidjan	2012
4	Côte d'Ivoire	Abidjan	Sea Invest	2013
5	Côte d'Ivoire	Abidjan	SOLEVO Côte d'Ivoire (2 units)	2001
6	Côte d'Ivoire	Abidjan	Yara Côte d'Ivoire	1990
7	Côte d'Ivoire	San Pédro	Agro West Africa – San Pedro	2020
8	Côte d'Ivoire	San Pédro	SOLEVO Côte d'Ivoire – San Pedro	2020
9	Côte d'Ivoire	San Pédro	Société d'Engrais d'Amenagement et de Phytosanitaire de Côte d'Ivoire (SEAP CI)	2011
10	Ghana	Asuboi	Glofert Ltd	2018

BLENDING, CONTINUED

No.	Country	Plant Site (Town/State)	Company	Year of Establishment
11	Ghana	Kpone	MacroFertil Ghana	2013
12	Ghana	Tema	Agricultural Manufacturing Group (AMG) Ltd	2020
13	Ghana	Tema	Chemico Ltd	2004
14	Ghana	Tema	OmniFert (2 units)	2017, 2019
15	Ghana	Tema	Yara Ghana Ltd	2007
16	Guinea	Conakry	Toguna Guinea Industries	2016
17	Mali	Bamako	Toguna Agro Industries – Bamako	2006
18	Mali	Ségou	Doucouré Partenaire Agro Industries (DPA)	2011
19	Mali	Sikasso	Société Générale des Fertilisants (SOGEFERT)	2010
20	Nigeria	Abia	Edusquare & Company Nigeria Ltd	1998
21	Nigeria	Akwa-Ibom	Greenwell Technologies Ltd	2010
22	Nigeria	Bauchi	Bauchi Fertilizer Blending Company Ltd	1999
23	Nigeria	Benue	Sora Fertilizer & Chemicals	1985
24	Nigeria	Ebonyi	Ebonyi State Fertilizer & Chemical Company Ltd	2004
25	Nigeria	Edo	WACOT Ltd (this plant was reactivated in 2017 after 14 years)	2003
26	Nigeria	Gombe	Gombe Fertilizer Blending Plant	2001
27	Nigeria	Gombe	Springfield Agro Ltd	2000
28	Nigeria	Gusau	Al-Yuma Fertilizers & Chemicals Company Ltd	2018
29	Nigeria	Gusau	Zam Agro-Chemicals & Fertilizer Company Ltd	2019
30	Nigeria	Gusau	Zamfara State Fertilizer Blending Plant	1998
31	Nigeria	Jigawa	Abdullazeez Fertilizer Company Ltd	2011
32	Nigeria	Jigawa	Malam Alu Agro Allied Company	2017
33	Nigeria	Jos	Bejafta Fertilizer & Chemical Company Ltd	1998
34	Nigeria	Kaduna	Barbedos Ltd	2018
35	Nigeria	Kaduna	Fertilizer & Chemicals Ltd	1988
36	Nigeria	Kaduna	Golden Fertilizer Company Ltd	2018
37	Nigeria	Kaduna	Matrix Fertilizer Ltd	2018
38	Nigeria	Kaduna	MFB Fertilizer & Chemical Companies Ltd	2013
39	Nigeria	Kaduna	Superphosphate Fertilizer & Chemical	1988
40	Nigeria	Kaduna	Zaria Fertilizer & Rice Mill (formerly American Tobacco)	2019
41	Nigeria	Kano	Al-Yuma Fertilizers & Chemicals Company Ltd	2016
42	Nigeria	Kano	Citizen Fertilizers & Chemicals Company Ltd	2017
43	Nigeria	Kano	Continental Fertilizer Ltd	2009
44	Nigeria	Kano	Hamdala Fertilizer Company	2019
45	Nigeria	Kano	Kano State Input Supply Company (2 units)	1981
46	Nigeria	Kano	Namalale Fertilizer & Chemical Company Ltd	2017
47	Nigeria	Kano	Sasisa Fertilizer Nigeria Ltd	1999
48	Nigeria	Kano	Solar Fertilizer & Chemical Product Ltd	2016
49	Nigeria	Katsina	Funtua Fertilizers & Chemicals	2003
50	Nigeria	Katsina	Greentide Agro Ltd	2018
51	Nigeria	Katsina	Jargaba Fertilizer Company	2019
52	Nigeria	Kebbi	Albarka Fertilizer & Chemical Company Ltd	2017
53	Nigeria	Kogi	TAK Agro & Chemicals	2019
54	Nigeria	Lagos	Golden Fertilizer Company Ltd	2019
55	Nigeria	Lagos	Premium Agrochemicals Ltd	2019
56	Nigeria	Niger	Crystallizer Nigeria Ltd	1996
57	Nigeria	Niger	Morris Fertilizers & Chemicals	1988
58	Nigeria	Niger	Savannah Fertilizer Services Ltd	2019
59	Nigeria	Rivers	Notore Chemical Industries PLC	Revamped in 2019
60	Nigeria	Rivers	PrimeGold Fertilizers	2009
61	Nigeria	Sokoto	Alelawa Fertilizer & Chemical Company Ltd	2013
62	Senegal	Dakar	SEDAB	2019
63	Togo	Lomé	Compagnie des Intrants Agricoles du Togo (CIAT)	2011

FUTURE PROJECTS

No.	Country	Plant Site	Company	Expected Operational Status
1	Burkina Faso	Bobo Dioulasso	Faso Fert	2022-2023
2	Burkina Faso	Bobo Dioulasso	Tropic Agro Chem	2022-2023
3	Burkina Faso	Koupèla	Société d'Exploitation des Phosphates du Burkina (SEPB)	2022
4	Côte d'Ivoire	Abidjan	OCP Côte d'Ivoire SA	2022
5	Côte d'Ivoire	Yamoussoukro	Ivoire Formulation	2022-2023
6	Mali	Bourem	Sangoye	2022-2023
7	Niger	Dosso	SOAPAM SA	2022-2023
8	Nigeria	Abuja	New Blender 4*	2021
9	Nigeria	Abuja	New Blender 5*	2021
10	Nigeria	Abuja (Plot 859, Idu Industrial Layout)	Agtho Merchant & Co. Ltd	2021
11	Nigeria	Bayelsa	Brass Fertilizer	Unknown
12	Nigeria	Kaduna	OCP Africa	Build: 2018, Operating: 2021
13	Nigeria	Kano (near)	New Blender 1*	2021
14	Nigeria	Kano (near)	New Blender 3*	2021
15	Nigeria	Lafia	Nasarawa Blending Plant	2021
16	Nigeria	Lagos, Lekki	Dangote Fertilizer	2021
17	Nigeria	Ogun	OCP Africa	Build: 2018, Operating: 2021
18	Nigeria	Port Harcourt	New Blender 2*	2021
19	Nigeria	Sokoto	OCP Africa	Build: 2018, Operating: 2021
20	Senegal	Dakar	Amafrique SUARL	2021
21	Senegal	Dakar	TSE	Unknown
22	Sierra Leone	Freetown	Mangara Agribusiness Company	2022

** Company name to be disclosed on completion.*

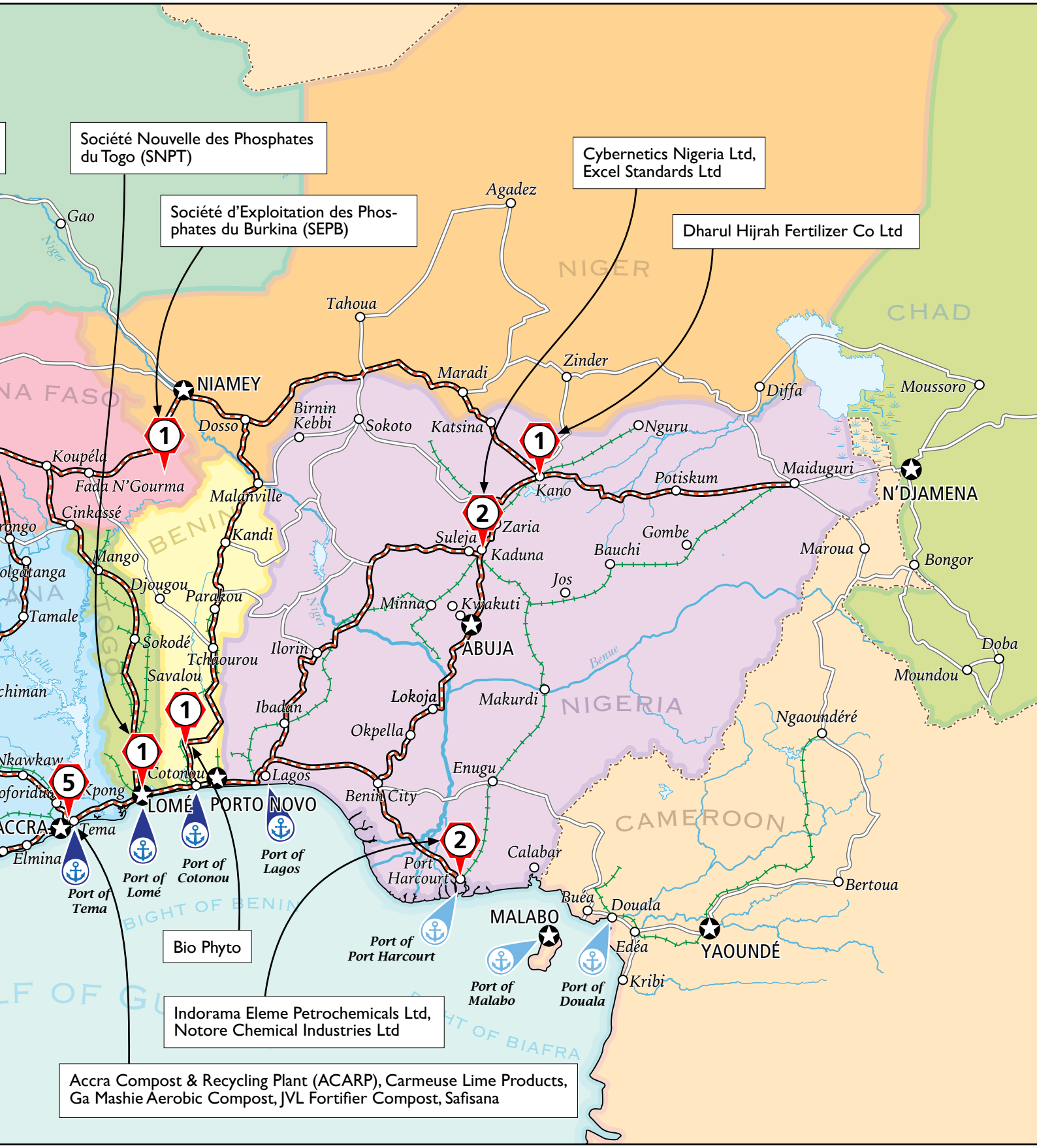
SOIL TESTING AND QUALITY CONTROL LABS

(see page 76)

No.	Country	Lab Site	Company/Organization	Type
1	Benin	Cotonou	Laboratoire des Sciences du Sol, Eaux et Environnement (LSSEE) [INRAB]	Public
2	Burkina Faso	Ouagadougou	Bureau National des Sols (BUNASOLS)	Public
3	Burkina Faso	Ouagadougou	Institut National pour l'Environnement et la Recherche Agricole (INERA)	Public
4	Côte d'Ivoire	Abidjan	ENVAL	Private
5	Côte d'Ivoire	Abidjan	Laboratoire National d'Appui au Développement Agricole (LANADA)	Public
6	Côte d'Ivoire	Vridi	Solevo Côte d'Ivoire	Private
7	Côte d'Ivoire	Vridi	Yara Côte d'Ivoire	Private
8	Ghana	Accra	EnvaServ Research Consult (ERC)	Private
9	Ghana	Accra	Ghana Atomic Energy Commission (GAEC)	Public
10	Ghana	Accra	SGS Laboratory Services Ghana Ltd.	Private
11	Ghana	Kwadaso	CSIR-Soil Research Institute	Public
12	Ghana	Pokuase	Plant Protection and Regulatory Services Directorate (PPRSD)	Public
13	Mali	Bamako	Laboratoire Sol-Eau-Plante (LABOSEP) [IER]	Public
14	Mali	Bamako	Toguna Agro Industries	Private
15	Mali	Kati	PROSLABS Microbio Consulting	Private
16	Niger	Niamey	Institut National de Recherche Agricole du Niger (INRAN)	Public
17	Niger	Niamey	International Crops Research Institute for the Semi-Arid Tropics (ICRISAT)	Int'l non-profit
18	Niger	Niamey	Quali-Control-Lab	Private
19	Nigeria	Ibadan	Institute of Agricultural Research and Training (IAR&T)	Public
20	Nigeria	Ibadan	ROTAS Soilab Ltd.	Private
21	Nigeria	Kaduna	National Fertilizer Development Centre (NFDC)	Public
22	Nigeria	Zaria	Soil Science Department, Ahmadu Bello University	Public
23	Senegal	Dakar	Centre National de Recherches Agronomiques (CNRA)/Bambey [ISRA]	Public
24	Senegal	Dakar	Institut de Recherche pour le Développement (IRD)	Public
25	Senegal	Dakar	Institut National de Pédologie (INP)	Public
26	Senegal	Mbao	Ceres-Locustox Foundation	Public
27	Togo	Lomé	Institut Togolais de Recherche Agronomique (ITRA)	Public

PRODUCTION


Industries Chimiques du Sénégal, Société d'Études et de Réalisation des Phosphates de Matam (SERPM), Élephant Vert Sénégal, Biotoss
PROFEBA, OrgaFert
Éléphant Vert Mali
Toguna Agro Industries
Faso Biogaz, Arom-H/Sol Fertile
NOUAKCHOTT
Port of Nouakchott
MAURITANIA
'Ayoûn el 'Atroûs
Néma
Tombouctou
Tilemsi
Saint-Louis
Rosso
Kaédi
Louga
Linguère
SENEGAL
Senegal
DAKAR
Touba
Diourbel
Thiès
Kaffrine
Kaolack
Port of Dakar
Kayes
Mopti
Ségou
BANJUL
Brikama
Tambacounda
Gambia
Port of Banjul
BAMAKO
Niger
Koutiala
OUAGADOUGOU
Mansôa
Bafatá
Koundâra
BISSAU
Port of Bissau
GAMBIA
Dabola
Bougouni
Sikasso
Bobo-Dioulasso
Tumu
Wa
Boké
Kindia
GUINEA
Kankan
Korhogo
Boundiali
Bole
GUINEA-BISSAU
CONAKRY
Port of Conakry
SIERRA LEONE
FREETOWN
Port of Freetown
Bo
Bonthe
Nzérékoré
Bouaké
Gbarnga
Man
YAMOUSSOUKRO
Daloa
Kumasi
LIBERIA
MONROVIA
Port of Monrovia
Buchanan
Abidjan
Cape Coast
San Pedro
Sassandra
Takoradi
Port of San Pedro
Port of Abidjan
Port of Takoradi
Mindelo
CAPE VERDE
PRAIA
ATLANTIC OCEAN
Éléphant Vert Côte d'Ivoire
Number of fertilizer production plants operating at this location
Capital
ABUJA
City/town
Kindia
Major port
Minor port
Country frontiers
Trade corridor
Roadway
Railway
Rivers, lakes
Sub-region limit


Société Nouvelle des Phosphates du Togo (SNPT)
Société d'Exploitation des Phosphates du Burkina (SEPB)
Cybernetics Nigeria Ltd, Excel Standards Ltd
Dharul Hijrah Fertilizer Co Ltd
Bio Phyto
Indorama Eleme Petrochemicals Ltd, Notore Chemical Industries Ltd
Accra Compost & Recycling Plant (ACARP), Carmeuse Lime Products, Ga Mashie Aerobic Compost, JVL Fortifier Compost, Safisana
NIGER
CHAD
BENIN
NIGERIA
CAMEROON
NIAMEY
N'DJAMENA
ABUJA
LOMÉ
PORTO NOVO
ACCRA
MALABO
YAOUNDÉ
Agadez
Gao
Tahoua
Zinder
Maradi
Diffa
Moussoro
Dosso
Birnin Kebbi
Sokoto
Katsina
Nguru
Koupéla
Fada N'Gourma
Malanville
Kano
Potiskum
Maiduguri
Cinkassé
Kandi
Suleja
Zaria
Gombe
Bauchi
Maroua
Bongor
Mango
Djougou
Parakou
Kaduna
Jos
Minna
Kwakuti
Tamale
Sokodé
Tchaourou
Ilorin
Savalou
Doba
Moundou
Lokoja
Makurdi
Ibadan
Okpella
Ngaoundéré
Cotonou
Lagos
Enugu
Benin City
Xpong
Tema
Elmina
Calabar
Port Harcourt
Buea
Douala
Bertoua
Edéa
Kribi
Port of Tema
Port of Lomé
Port of Cotonou
Port of Lagos
Port of Port Harcourt
Port of Malabo
Port of Douala
BIGHT OF BENIN
BIGHT OF BIAFRA

PRODUCTION PROFILES

BENIN

ALLADA — **BIO PHYTO**

Products: Organic Fertilizer
Capacity: 8 mtph
Year established: 2013
Contact: **Zodomè Gildas**
Director
+229 97 41 19 83
zodomegildas@biophyto-benin.com

BURKINA FASO

OUAGADOUGOU — **AROM-H/SOL FERTILE**

Products: Organic Fertilizer
Capacity: 20 mtpd
Year established: 2014
Contact: **Samuel Zongo**
General Director
+226 70 70 56 10
aromhsolfertile@gmail.com

OUAGADOUGOU — **FASO BIOGAZ**

Products: Organic Fertilizer (Biodigester)
Capacity: 2,500 m^3
Year established: 2015
Contact: **Elie Tiono**
Production Manager
+226 70 96 75 88
tionoelie@yahoo.fr

OUAGADOUGOU — **SOCIÉTÉ D'EXPLOITATION DES PHOSPHATES DU BURKINA (SEPB)**

Products: Natural Phosphate Rock
Capacity: –
Year established: 2012
Contact: **Djiguemde Oumarou**
Head of Agricultural Experimentation & Extension Service
+226 25 32 46 54, +226 24 79 10 16
oumaroudjiguemde@yahoo.fr

CÔTE D'IVOIRE

ADZOPÉ — **ÉLÉPHANT VERT**

Products: Organic Fertilizer (Industrial composting)
Capacity: 50,000 mtpy
Year established: 2014
Contact: **Alexandre BRY**
General Director
+225 07 89 83 70 21
alexandre.bry@elephant-vert.com

GHANA

ADJEN KOTOKU — **ACCRA COMPOST & RECYCLING PLANT (ACARP)**

Products: Organic Fertilizer
Capacity: –
Year established: 2012
Contact: **Barnabas Abane Ampaw**
+233 302 21 35 00
bampaw@acarpghana.com

TAKORADI — **CARMEUSE LIME PRODUCTS GH LTD**

Products: Lime supplements (terracalco, dolomite, calcium carbonate)
Capacity: 13,000 mtpy
Year established: 1993, but Agric Lime production started in 2020
Contact: **Faisal Iddrisu**
+233 206 21 00 88
faisal@carmeuseghana.com

ACCRA (JAMESTOWN) — **GA MASHIE AEROBIC COMPOST**

Products: Organic Compost
Capacity: 48 mtpy
Year established: 2013
Contact: **Martha Adjoa Nartey**
Innovations Manager
+233 208 75 07 04
m.annan@jekoraventures.com

TEMA (BORTEYMAN) — **JVL FORTIFIER COMPOST**

Products: Organic Compost
Capacity: 200-250 mtpy
Year established: 2017
Contact: **Martha Adjoa Nartey**
Innovations Manager
+233 208 75 07 04
m.annan@jekoraventures.com

ASHAIMAN — **SAFISANA**

Products: Organic Fertilizer (Anaerobic Digester)
Capacity: 0.4 mtpd
Year established: 2016
Contact: **Gideon Oduro Annor-Gymafi**
+233 248 21 46 18
gideon@safisana.org

MALI

SÉGOU — **ÉLÉPHANT VERT**

Products: Organic Fertilizer
Capacity: 50,000 mtpy
Year established: 2018
Contact: **Sidibé Oumou Vanhoorebeke**
General Director
+223 20 22 08 04
oumou.vanhoorebeke@elephantvert.ch

BAMAKO — **ORGAFERT**

Products: Organic Fertilizer
Capacity: Unknown
Year established: 2018
Contact: **Sidibé Oumou Diallo**
General Director
+223 65 50 75 75, +223 79 19 02 51
orgafertmali@yahoo.com

BAMAKO **PROFEBA**

Products: Organic Fertilizer
Capacity: 4,000 mtpy
Year established: 2017
Contact: **Adama Moussa Dembélé**
Coordinator
+233 20 21 00 40, +233 69 83 37 43
adamsdembele1@yahoo.fr

TILEMSI **TOGUNA AGRO INDUSTRIES – TILEMSI**

Products: Natural Phosphate Rock
Capacity: 300,000 mtpy
Year established: 2009
Contact: **Oumar Guindo**
Managing Director
+223 66 74 00 60, +223 20 20 30 81,
+223 20 20 30 85
omguindo@groupetoguna.com

NIGERIA

KADUNA **CYBERNETICS NIGERIA LTD**

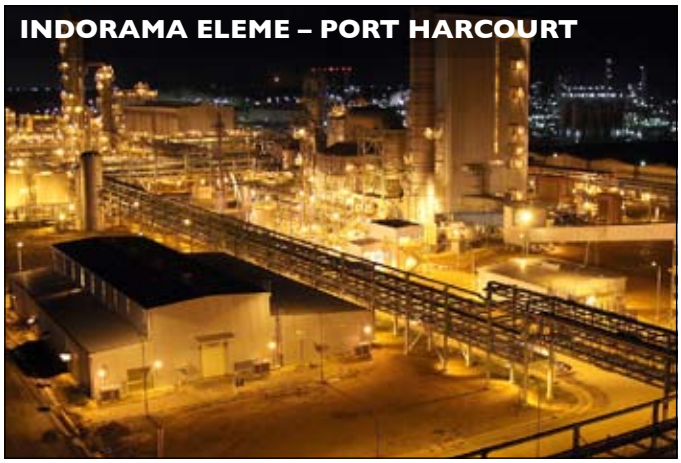
Products: Micronutrients
Capacity: 2,500 mtpy
Storage capacity: 850 mt raw material
Year established: 1985
Contact: **Pius Kole-James**
Managing Director and CEO
+234 80 53 15 88 52
piuskolejames@yahoo.com

KADUNA **DHARUL HIJRAH FERTILIZER CO LTD**

Products: Organic Fertilizers
Capacity: 8 mtph
Year established: 2016
Contact: **Alkali M. Mamu**
Chairman
+234 80 39 79 52 20
dharulhijrahfertilizers@gmail.com

KANO **EXCEL STANDARDS LTD**

Products: Compound Fertilizer Granulation Plant & Bulk Blending Plant
Capacity: 5 mtph
Year established: 2013
Contact: **Abubakar Zakariya Maimalari**
CEO
+234 80 33 20 31 72
exstan1@gmail.com



PORT HARCOURT **INDORAMA ELEME FERTILIZERS & CHEMICALS LTD**

Products: Urea
Capacity: 1,500,000 mtpy
Year established: 2016
Contact: **Balbir Singh**
Head BD and Agronomy
+234 90 87 07 00 09
basingh@indorama.com.ng

RIVERS

NOTORE CHEMICAL INDUSTRIES PLC

Products: Urea
Capacity: 400,000 mtpy
Year established: 1988 as NAFCON, 2005 as Notore
Contact: **Ngozi Mba**
Head, Corporate Communications
+234 80 53 39 12 15
ngozi.mba@notore.com

NOTORE CHEMICAL INDUSTRIES – ONNE

SENEGAL

DAKAR

BIOTOSS

Products: Organic Fertilizers
Capacity: 5,000 mtpy
Year established: 2017
Contact: **Moulaye Kande**
CEO
+221 77 644 95 89
moulayekande@yahoo.fr

DAKAR

ÉLÉPHANT VERT SÉNÉGAL

Products: Organic Fertilizers (Composting)
Capacity: Unknown
Year established: 2019
Contact: **Sarah Boissy LOPEZ**
General Director
+221 33 860 00 62
sarah.boissy@elephant-vert.com

DAKAR

INDUSTRIES CHIMIQUES DU SÉNÉGAL (ICS)

Products: Phosphate Rock, Phosphoric Acid, DAP, NPK, Gypsum
Capacity: 250,000 mtpy
Year established: 1976
Contact: **Abdoulaye Dièye**
Head of Fertilizer Sales
+221 776 446 467
abdieye@ics.sn

INDUSTRIES CHIMIQUES (ICS) – DAKAR

DAKAR

SOCIETE D'ÉTUDES ET DE RÉALISATION DES PHOSPHATES (SERPM)

Products: Phosphate Rock
Capacity: 25,000 mtpy
Year established: 2007
Contact: **Malick Sow**
DGA
+221 775 42 26 54
malickksoww@gmail.com

TOGO

KPÉMÉ

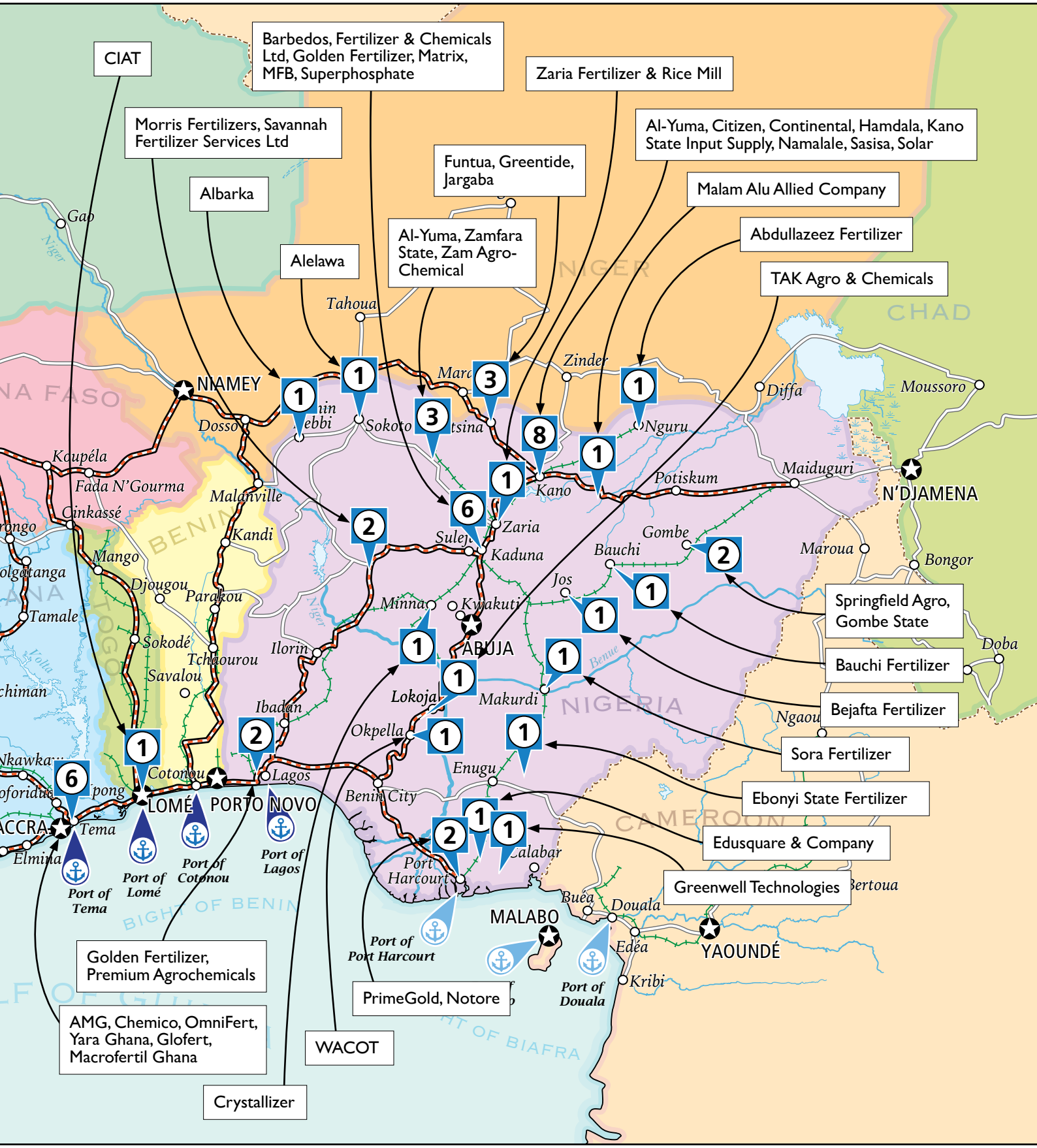
SOCIÉTÉ NOUVELLE DES PHOSPHATES DU TOGO (SNPT)

Products: Phosphate Rock
Capacity: 4,800,000 mtpy
Year established: 1961
Contact: **Michel Kezie**
Managing Director
+228 90 04 07 96
dg@phosphatesdutogo.com

SNPT – KPÉMÉ

BLENDING


Doucouré Partenaire Agro-Industries
CIPAM SA, IFCA
SEDAB
Toguna Agro Industries
SOGEFERT
NOUAKCHOTT
Port of Nouakchott
MAURITANIA
MALI
'Ayoûn el 'Atroûs
Néma
Tombouctou
Tilemsi
Saint-Louis
Rosso
Kaédi
Louga
Linguère
SENEGAL
Senegal
DAKAR
Touba
Diourbel
Thiès
Kaffrine
Kaolack
Port of Dakar
Kayes
Mopti
Ségou
BANJUL
Brikama
Tambacounda
Gambia
BAMAKO
Niger
Koutiala
OUAGADOUGOU
Port of Banjul
Mansôa
Bafatá
Koundâra
BISSAU
Port of Bissau
GAMBIA
Boké
Kindia
Dabola
Bougouni
Sikasso
Bobo-Dioulasso
Tumu
Wa
GUINEA-BISSAU
GUINEA
Kankan
Korhogo
Boundiali
Bole
CONAKRY
Port of Conakry
SIERRA LEONE
FREETOWN
Toguna Guinea Industries
Bo
Nzérékoré
Bouaké
Port of Freetown
Bonthe
Gbarnga
Man
YAMOUSSOUKRO
Daloa
Kumasi
LIBERIA
MONROVIA
Buchanan
Abidjan
Cape Coast
Port of Monrovia
San Pedro
Sassandra
Takoradi
Port of San Pedro
Port of Abidjan
Port of Takoradi
Mindelo
CAPE VERDE
PRAIA
ATLANTIC OCEAN
Agro West Africa San Pédro, SEAP-CI, SOLEVO Côte d'Ivoire
Agro West Africa Abidjan, SOLEVO Côte d'Ivoire, Sea Invest, Yara Côte d'Ivoire
Number of fertilizer blending plants operating at this location
Country frontiers
Trade corridor
Roadway
Railway
Rivers, lakes
Sub-region limit
ABUJA
Capital
Kindia
City/town
Major port
Minor port


CIAT
Barbedos, Fertilizer & Chemicals Ltd, Golden Fertilizer, Matrix, MFB, Superphosphate
Zaria Fertilizer & Rice Mill
Morris Fertilizers, Savannah Fertilizer Services Ltd
Al-Yuma, Citizen, Continental, Hamdala, Kano State Input Supply, Namalale, Sasisa, Solar
Funtua, Greentide, Jargaba
Albarka
Malam Alu Allied Company
Al-Yuma, Zamfara State, Zam Agro-Chemical
Abdullazeez Fertilizer
Alelawa
TAK Agro & Chemicals
Springfield Agro, Gombe State
Bauchi Fertilizer
Bejafta Fertilizer
Sora Fertilizer
Ebonyi State Fertilizer
Edusquare & Company
Greenwell Technologies
Golden Fertilizer, Premium Agrochemicals
AMG, Chemico, OmniFert, Yara Ghana, Glofert, Macrofertil Ghana
PrimeGold, Notore
WACOT
Crystallizer
NIAMEY
LOMÉ
PORTO NOVO
ABUJA
MALABO
YAOUNDÉ
N'DJAMENA
ACCRA
Port of Tema
Port of Lomé
Port of Cotonou
Port of Lagos
Port of Port Harcourt
Port of Douala
NIGER
CHAD
NIGERIA
BENIN
TOGO
CAMEROON
BIGHT OF BENIN
BIGHT OF BIAFRA
Gao
Tahoua
Zinder
Diffa
Moussoro
Nguru
Dosso
Sokoto
Kano
Potiskum
Maiduguri
Koupéla
Fada N'Gourma
Malanville
Cinkassé
Kandi
Zaria
Kaduna
Gombe
Bauchi
Maroua
Bongor
Mango
Djougou
Parakou
Jos
Minna
Kwakuti
Tamale
Sokodé
Tchaourou
Savalou
Ilorin
Lokoja
Makurdi
Doba
Ibadan
Okpella
Ngaou
Cotonou
Lagos
Enugu
Benin City
Port Harcourt
Calabar
Buea
Douala
Edéa
Kribi
Elmina
Tema

BLENDING PROFILES

BURKINA FASO

BOBO DIOULASSO

SOCIÉTÉ DE COMMERCIALISATION DE PRODUCTION AGRICOLE ET DE MARCHANDE (CIPAM SA)

Type of plant: EMT Weighcont Blender
Capacity: 60 mtph
Year established: 2003
Contact: **Bassolet Armand**
Operations Manager
+226 78 03 61 10, +226 20 98 40 61
armandb@cipam.bf

BOBO DIOULASSO

INDUSTRIES CHIMIQUES FERTILISANTES D'AFRIQUE (IFCA)

Type of plant: EMT Blender
Capacity: 60 mtph
Year established: 2016
Contact: **Claude Isaac Zongo**
Administrator
+226 76 61 57 10, +226 70 20 48 83
yissono@gmail.com, yalzongo@gmail.com

CÔTE D'IVOIRE

ABIDJAN

AGRO WEST AFRICA – ABIDJAN

Type of plant: RS Trading Blender
Capacity: 50 mtph
Year established: 2012
Contact: **Jean Marie Kroa**, Director of Operations
Siata Coulibaly, Sales Manager
+225 27 20 32 06 76, +225 07 77 08 85 37,
+225 07 07 69 47 10
jeanmarie.kroa@conadholding.com
siata.coulibaly@agrowestafrica.com

SAN PEDRO

AGRO WEST AFRICA – SAN PEDRO

Type of plant: RS Trading Blender
Capacity: 50 mtph
Year established: 2020
Contact: **Jean Marie Kroa**, Director of Operations
Siata Coulibaly, Sales Manager
+225 27 20 32 06 76, +225 77 08 85 37,
+225 07 69 47 10
jeanmarie.kroa@conadholding.com,
siata.coulibaly@agrowestafrica.com

ABIDJAN

SEA INVEST

Type of plant: EMT Shamrock Blender
Capacity: 100 mtph
Year established: 2013
Contact: **Anthony Arcidiaco**
Managing Director
+225 07 48 51 98 55
anthony.arcidiaco@sea-invest.com

SAN PEDRO

SOCIÉTÉ D'ENGRAIS D'AMENAGEMENT ET DE PHYTOSANITAIRE DE CÔTE D'IVOIRE (SEAP CI)

Type of plant: EMT Blender
Capacity: 40 mtph
Year established: 2011
Contact: **Atse Fernand Niango**
Head of Development and Commercial
+225 07 07 79 80 86 mmm
fniango@seap-ci.net

ABIDJAN

SOLEVO CÔTE D'IVOIRE – ABIDJAN

Type of plant: EMT Shamrock Blender, and other Blender
Capacity: 25 mtph
Year established: 2001, 2015
Contact: **Faraban Traoré**
Head of Agro
+225 07 88 82 96 17
faraban.traore@solevogroup.com

SAN PÉDRO

SOLEVO CÔTE D'IVOIRE – SAN PÉDRO

Products: Blender
Capacity: 25 mtph
Year established: 2020
Contact: **Faraban Traoré**
Head of Agro
+225 07 88 82 96 17
faraban.traore@solevogroup.com

ABIDJAN

YARA CÔTE D'IVOIRE

Type of plant: EMT 9T Blender & Bulkit 10T, Bagging Janodet
Capacity: 60 mtph blend, 90 mtph straight
Year established: 1990
Contact: **Kanigui Yeo**
Managing Director
+225 05 55 27 27 27
kanigui.yeo@yara.com

GHANA

TEMA

AGRICULTURAL MANUFACTURING GROUP (AMG) LTD

Type of plant: Yargus Blender
Capacity: 800 mtpd
Year established: 2020
Contact: **Henry Otoo-Mensah**
General Manager
+233 244 337 263
h.otoo-mensah@amgghana.com

TEMA

CHEMICO LTD

Type of plant: 2 EMT Shamrock Blenders
Capacity: 1,000 mtpd
Year established: 2004
Contact: **Prince Agyemang-Yeboah**
Director of Sales and Marketing
+233 303 202 991
chemico@chemicogh.com

KPONE

MACROFERTIL GHANA

Type of plant: EMT Shamrock Blender
Capacity: 20 mtph
Year established: 2013
Contact: **Ms. Mawunyo Puplampu**
Operations Manager
+233 540 107 262
mawunyo.puplampu@ldcom.com

ASUBOI

GLOFERT LTD

Type of plant: EMT Weighcont Blender
Capacity: 120 mtph
Year established: 2018
Contact: **Francis Dei**
Vice President – Operations
+233 242 022 517
francis.dei@glofert.com

TEMA

OMNIFERT (2 UNITS)

Type of plant: Bulk Blender
Capacity: 15 mtph and 50 mtph
Year established: 2017 and 2019
Contact: **Michael Zormelo**
Managing Director
+233 243 802 228
michael@ominfert.com

TEMA	YARA GHANA LTD
Type of plant:	EMT Weighcont Blender
Capacity:	45 mtph
Year established:	2007
Contact:	**Danquah Addo-Yobo** Managing Director +233 540 112 137, +233 302 770 079 danquah.addo-yobo@yara.com

GUINEA

CONAKRY	TOGUNA GUINEA INDUSTRIES
Type of plant:	RS-Trading Blender
Capacity:	90 mtph
Year established:	2016
Contact:	**Sékou Cissé** Managing Director +224 620 727 772, +224 664 256 221 togunaguinee@gmail.com

MALI

SÉGOU	DOUCOURÉ PARTENAIRE AGRO INDUSTRIES (DPA)
Type of plant	EMT Weighcont Blender
Capacity:	120 mtph
Year established:	2011
Contact:	**Fatoumata Binta Doucouré** Financial Manager +223 20 21 69 06, +223 66 16 80 17 fdoucoure@dpa-industries.com

SIKASSO	SOCIÉTÉ GÉNÉRALE DES FERTILISANTS (SOGEFERT)
Type of plant:	Layco by Yargus – Declining Weight Blender
Capacity:	1,000 mtpd
Year established:	2010
Contact:	**Ousmane Sidibe** CEO +223 76 40 31 15 ousmane.sibide@gmail.com

BAMAKO	TOGUNA AGRO INDUSTRIES – BAMAKO
Type of plant:	RS-Trading Blender
Capacity:	400,000 mtpy
Year established:	2006
Contact:	**Oumar Guindo** Managing Director +223 66 74 00 60, +223 44 97 94 00, +223 44 97 94 01 omguindo@groupetoguna.com

NIGERIA

JIGAWA	ABDULLAZEEZ FERTILIZER COMPANY LTD
Type of plant:	NPK Blender
Capacity:	6 mtph
Year established:	2011
Contact:	**Safiyanu Abdullazeez** Managing Director +234 80 33 69 30 01 azeezfertilizercoy@gmail.com

GUSAU

AL-YUMA FERTILIZERS & CHEMICALS COMPANY LTD

Type of plant: Blender
Capacity: 30 mtph
Year established: 2018
Contact: **Abubakar Musa Mainaira**
General Manager
+234 80 65 46 27 27
abubakarmainaira@gmail.com

KANO

AL-YUMA FERTILIZERS & CHEMICALS COMPANY LTD

Type of plant: A.J. Sackett Blender
Capacity: 100 mtph
Year established: 2016
Contact: **Ado Yazid Ibrahim**
Director
+234 80 93 17 19 00
info@alyuma-group.com

KEBBI

ALBARKA FERTILIZER & CHEMICAL COMPANY LTD

Type of plant: Bagtech Blender
Capacity: 50 mtph
Year established: 2017
Contact: **Engr. Mohammed Zauro**
Chairman
+234 80 35 89 85 00
zauromohammed@gmail.com

SOKOTO

ALELAWA FERTILIZER & CHEMICAL COMPANY LTD

Type of plant: Blender (Italian)
Capacity: 20 mtph
Year established: 2013
Contact: **Alh. Suleiman Abubakar Fana**
Managing Director
+234 80 67 78 63 91
alelawaglobal@yahoo.com

KADUNA

BARBEDOS LTD

Type of plant: Bagtech Blender
Capacity: 90 mtph
Year established: 2018
Contact: **Mr. James Ayodele A.**
General Manager
+234 70 30 77 02 02

BAUCHI

BAUCHI FERTILIZER BLENDING COMPANY LTD

Type of plant: Blender
Capacity: 25 mtph
Year established: 1999
Contact: **Bappa Aliyu Misau**
Chairman
+234 80 33 46 84 70
bappamaliyu@gmail.com

JOS

BEJAFTA FERTILIZER & CHEMICAL COMPANY LTD

Type of plant: Blender
Capacity: 50 mtph
Year established: 1998
Contact: **Hon. Jacob Mallo**
Managing Director and CEO
+234 81 84 88 11 14
jacobmallo@yahoo.com

KANO

CITIZEN FERTILIZERS & CHEMICALS COMPANY LTD – GREEN TECH (DENMARK)

Type of plant: Green Tech Blender (Denmark)
Capacity: 20 mtph
Year established: 2017
Contact: **Haris B. Haris**
General Manager
+234 80 37 05 33 67
harisbharis39@gmail.com

KANO

CONTINENTAL FERTILIZER LTD

Type of plant: Bulk Blender
Capacity: 90 mtph
Year established: 2009
Contact: **Alhaji Ibrahim Mohammed**
CEO
+234 70 33 07 31 11
continentalfertilizerlimited@gmail.com

NIGER

CRYSTALLIZER NIGERIA LTD

Type of plant: Blender
Capacity: 10 mtph
Year established: 1996
Contact: **Capt. Mohammed M. Musa**
Managing Director
+234 80 33 74 18 81
crystallizernigltd@yahoo.com

EBONYI

EBONYI STATE FERTILIZER & CHEMICAL COMPANY LTD

Type of plant: Bulk Blender
Capacity: 40 mtph
Year established: 2004
Contact: **Engr. Prof. Ogbonnaya Chukwu**
General Manager
+234 80 35 50 79 29
chuogbo@yahoo.com

ABIA

EDUSQUARE & COMPANY NIGERIA LTD

Type of plant: Blender
Capacity: 60 mtph
Year established: 1998
Contact: **Mr. Edu Ogbonnaya**
Managing Director
+234 80 33 22 72 57
edusquarecom@yahoo.com,
richfieldfertilizer@gmail.com

KADUNA

FERTILIZER & CHEMICALS LTD

Type of plant: A.J. Sackett Blender (Bagtech)
Capacity: 200 mtph
Year established: 1988
Contact: **O. M. Pandya**
General Manager
+234 80 37 02 05 21
ompandya@gmail.com

KATSINA

FUNTUA FERTILIZERS & CHEMICALS

Type of plant: Blender – Denmark Technology
Capacity: 28 mtph
Year established: 2003
Contact: **Alhaji Hafis Mohammad Bashir**
General Manager
+234 80 37 03 78 74
hafmoh2000@yahoo.co.uk

KADUNA

GOLDEN FERTILIZER COMPANY LTD

Type of plant: Sacket-Waconia (Bagtech) Blender
Capacity: 30 mtph
Year established: 2018
Contact: **Engr. Olusegun I. Falade**
Head, Agro Input
+234 81 13 39 44 72
sfalade@fmnplc.com

LAGOS

GOLDEN FERTILIZER COMPANY LTD

Type of plant: Sacket-Waconia (Bagtech) Blender
Capacity: 100 mtph
Year established: 2019
Contact: **Olusegun Falade**
Head, Agro Input
+234 81 13 39 44 72
sfalade@fmnplc.com

GOMBE

GOMBE FERTILIZER BLENDING PLANT

Type of plant: Blender
Capacity: 18 mtph
Year established: 2001
Contact: **Jagdish Pandey**
Managing Director
+234 70 19 98 01 13
jagdish@springfieldagro.com

KATSINA

GREENTIDE AGRO LTD

Type of plant: Ranco Blender
Capacity: 90 mtph
Year established: 2018
Contact: **Alh. Ibrahim Aliyu**
Director
+234 81 87 66 27 17

AKWA-IBOM

GREENWELL TECHNOLOGIES LTD

Type of plant: Blender
Capacity: 90 mtph
Year established: 2010
Contact: **Johnny S. Udo**
Managing Director
+234 80 64 44 74 05
judo@greenwelltechnologies.com

KANO

HAMDALA FERTILIZER COMPANY

Type of plant: Blender
Capacity: 120–200 mtph
Year established: 2019
Contact: **Alhaji Lawal Abbas Garba**
Chairman
+234 80 55 88 63 59
info@hamdalafertilizer.com

KATSINA

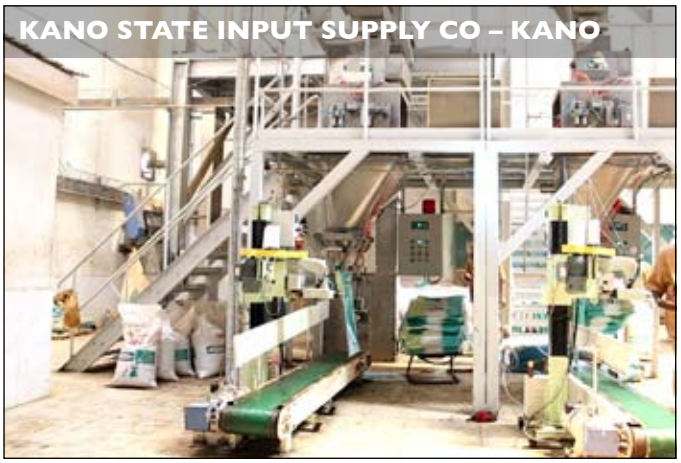
JARGABA FERTILIZER COMPANY

Type of plant: Blender – Beidou Chinese
Capacity: –
Year established: 2019
Contact: **Abdulbasir Abubakar**
Managing Director
+234 80 38 76 99 62

KANO

KANO STATE INPUT SUPPLY COMPANY

Type of plant: Green Tech (Denmark), Chinese, Tower Blender
Capacity: 60 mtph
Year established: 1981
Contact: **Bala Inuwa**
Managing Director and CEO
+234 80 39 46 24 22
kascokano@gmail.com



MALAM ALU AGRO ALLIED CO – JIGAWA

JIGAWA — **MALAM ALU AGRO ALLIED COMPANY**

Type of plant: Blender – Beidou Chinese
Capacity: 40 mtph
Year established: 2017
Contact: **Alh. Mansur Da'u Aliyu**
General Manager
+234 80 37 03 21 10
mansur.daliyu@malamalu.com

MATRIX FERTILIZER LTD – KADUNA

KADUNA — **MATRIX FERTILIZER LTD**

Type of plant: Yargus Blender
Capacity: 120 mtph
Year established: 2018
Contact: **Abdulkabir Adisa Aliu**
Managing Director and CEO
+234 80 57 18 45 81
abdulkabir@matrixgroup.ng.com

KADUNA — **MFB FERTILIZER & CHEMICAL COMPANY LTD**

Type of plant: Ranco Blender
Capacity: 90 mtph
Year established: 2013
Contact: **Mohammed Maina**
Assistant General Manager
+234 80 33 11 40 24, +234 80 99 28 00 98
maimoha@yahoo.com

MFB FERTILIZER & CHEMICAL – KADUNA

MORRIS FERTILIZERS & CHEMICALS – NIGER

NIGER — **MORRIS FERTILIZERS & CHEMICALS**

Type of plant: A.J. Sackett Blender (Bagtech)
Capacity: 57 mtph for 2 bagging lines
Year established: 1988
Contact: **Emmanuel Fom**
General Manager
+234 80 33 14 69 23

KANO — **NAMALALE FERTILIZER & CHEMICAL COMPANY LTD**

Type of plant: Blender
Capacity: 5 mtph
Year established: 2017
Contact: **Umar Shehu Musa**
General Manager
+234 80 67 67 67 45

NOTORE CHEMICAL INDUSTRIES – RIVERS

RIVERS **NOTORE CHEMICAL INDUSTRIES PLC**

Type of plant: Yargus Blender
Capacity: 2000 mtpd
Year established: Revamped in 2019
Contact: **Tijjani St. James**
Group Head, Commercial
+234 81 60 00 06 18
tijjani.st.james@notore.com

PREMIUM AGROCHEMICALS LTD – LAGOS

LAGOS **PREMIUM AGROCHEMICALS LTD**

Type of plant: Bagtech Blender
Capacity: –
Year established: 2019
Contact: **Tapiwa Muchenwa**
Chief Supervisor
+234 70 56 99 22 12

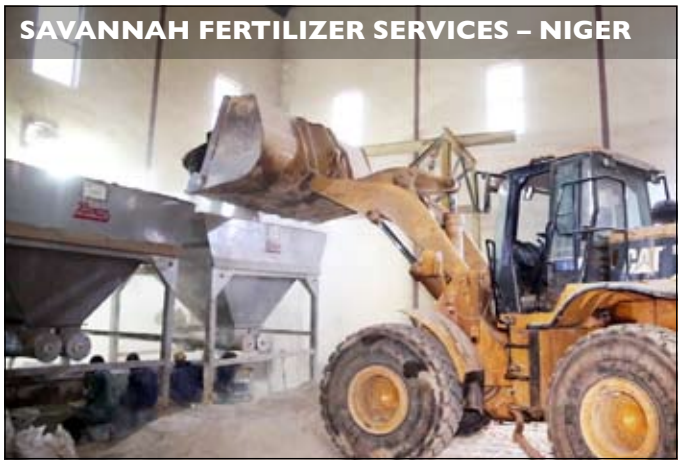
RIVERS **PRIMEGOLD FERTILIZERS**

Type of plant: NPK Blender
Capacity: 50 mtph
Year established: 2009
Contact: **Felix Isimepkeni Okonti**
Managing Director and CEO
+234 80 33 00 80 36, +234 81 73 00 80 36
felix@primegoldfertilizers.com

KANO **SASISA FERTILIZER NIGERIA LTD**

Type of plant: Blender
Capacity: 15 mtph
Year established: 1999
Contact: **Dr. Surajo Muhammed**
Chairman
+234 80 65 67 36 42
sasisanigltd91@yahoo.com

SAVANNAH FERTILIZER SERVICES – NIGER



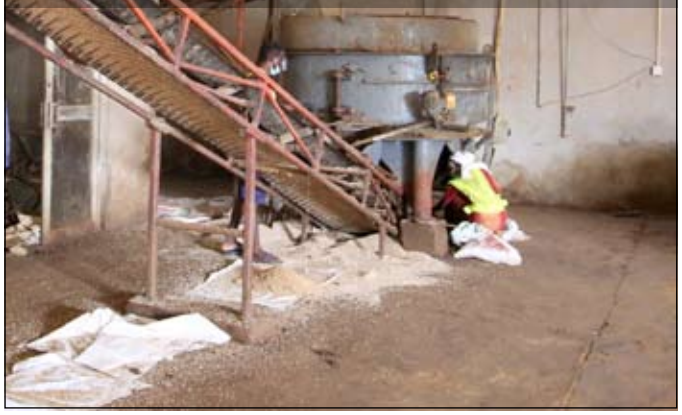
NIGER **SAVANNAH FERTILIZER SERVICES LTD**

Type of plant: Ranco Blender
Capacity: 65 mtph
Year established: 2019
Contact: **Alh. Aliyu Mustapha**
Executive Director
+234 80 36 08 17 97
aliyumustapha3@yahoo.com

KANO **SOLAR FERTILIZER & CHEMICAL PRODUCT LTD**

Type of plant: Blender
Capacity: 7 mtph
Year established: 2016
Contact: **Sanusi Mohammed**
Managing Director and CEO
+234 80 37 03 95 73
sfchemproduct@gmail.com

SORA FERTILIZERS & CHEMICALS – BENUE



BENUE **SORA FERTILIZERS & CHEMICALS**

Type of plant: Blender
Capacity: 10 mtph
Year established: 1985
Contact: **Robert Orya**
Managing Director and CEO
+234 80 93 74 05 55
robertorya@yahoo.com

GOMBE **SPRINGFIELD AGRO LTD**

Type of plant: Blender
Capacity: 2 mtph
Year established: 2000
Contact: **Mr. Tarun Das**
Managing Director and CEO
+234 70 12 99 99 99
tarun@afriventures.com

KADUNA

SUPERPHOSPHATE FERTILIZER & CHEMICAL

Type of plant: A.J. Sackett Gravity Blender
Capacity: 150 mtph
Year established: 1988
Contact: **Danjuma Etuh**
Managing Director
+234 80 23 07 55 28
danjuma@sfcnig.com

KOGI

TAK AGRO & CHEMICALS

Type of plant: A.J. Sackett Blender
Capacity: 60 mtph
Year established: 2019
Contact: **Moses Ayin Akanet**
Blending Plant Manager
+234 80 29 12 28 85

EDO

WACOT LTD

Type of plant: Blender (China)
Capacity: 7 mtph
Year established: 2003 (reactivated in 2017 after 14 years)
Contact: **Pankaj Chawla**
Head Agric Inputs
+234 90 99 70 99 04, +234 70 64 01 64 49
pankaj@clicktgi.net

GUSAU

ZAM AGRO-CHEMICALS & FERTILIZER COMPANY LTD

Type of plant: Yargus Blender
Capacity: 120 mtph
Year established: 2019
Contact: **Engr. Kanti**
+234 80 33 05 26 62
abdulganiyu1963@gmail.com

GUSAU

ZAMFARA STATE FERTILIZER BLENDING PLANT

Type of plant: Blender
Capacity: 35 mtph
Year established: 1998
Contact: **Mustapha Muhammadu**
Managing Director
+234 80 35 89 63 70
ankamustafa@yahoo.com, mustafaanka9@gmail.com

KADUNA

ZARIA FERTILIZER & RICE MILL (FORMERLY AMERICAN TOBACCO)

Type of plant: Yargus Blender
Capacity: 120 mtph
Year established: 2019
Contact: **Muhammad Lawal Aliyu**
Chairman
+234 80 33 05 01 12
lalidade@yahoo.com, zariablenders@gmail.com

SENEGAL

DAKAR

SEDAB

Type of plant: Blender
Capacity: 40 mtph
Year established: 2019
Contact: **Moulaye Kande**
CEO
+221 776 449 589
moulayekande59@yahoo.fr

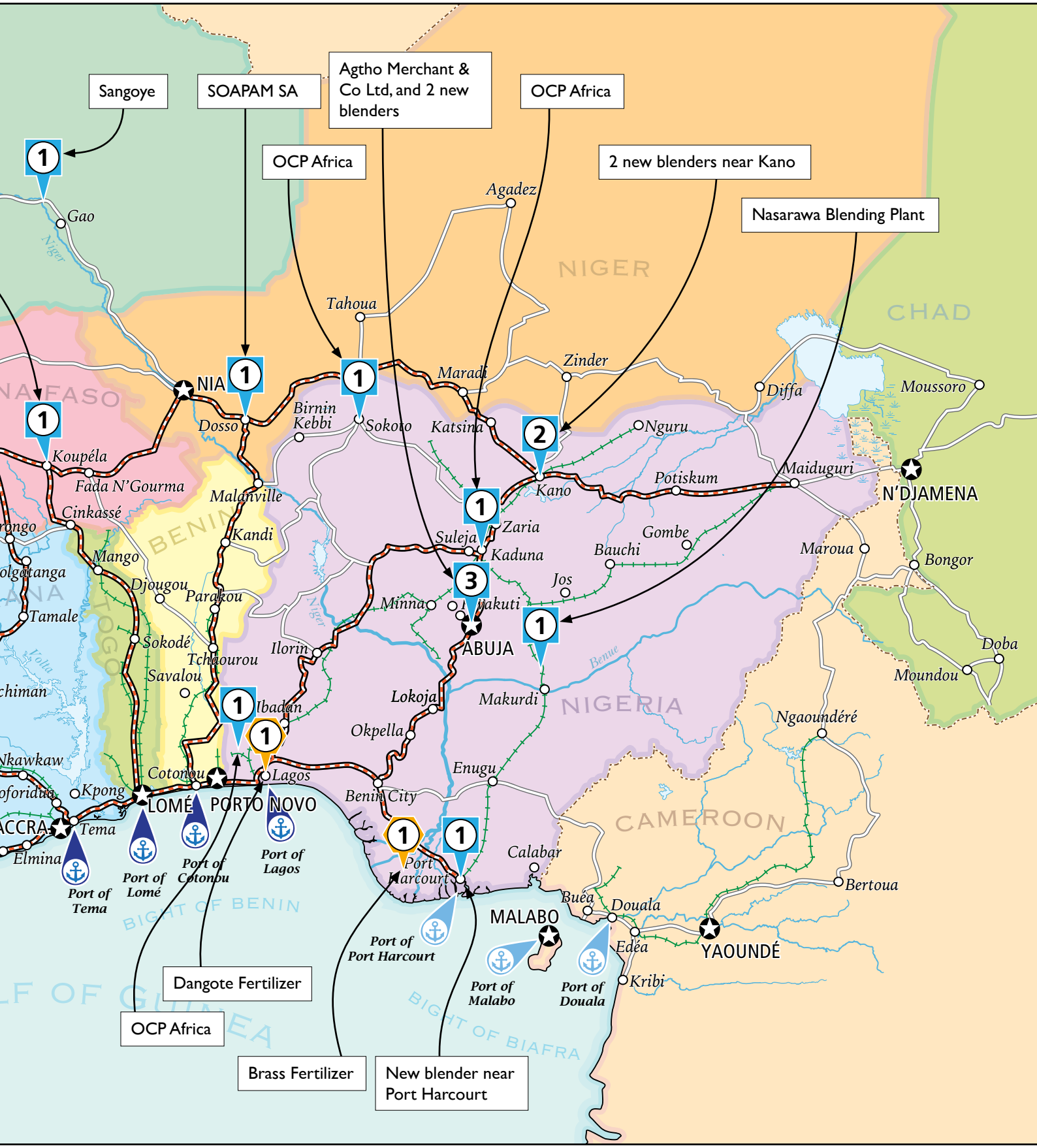
TOGO

LOMÉ

COMPAGNIE DES INTRANTS AGRICOLES DU TOGO (CIAT)

Type of plant: EMT Weighcont Blender
Capacity: 120 mtph
Year established: 2011
Contact: **Desanti Gerard**
Managing Director
+228 90 04 64 24
desantigerard@yahoo.fr; desanti@ciat.tg

FUTURE PROJECTS


Sangoye
SOAPAM SA
Agtho Merchant & Co Ltd, and 2 new blenders
OCP Africa
OCP Africa
2 new blenders near Kano
Nasarawa Blending Plant
Gao
Agadez
NIGER
CHAD
Tahoua
Zinder
Maradi
Diffa
Moussoro
NIA
Birnin Kebbi
Sokoto
Katsina
Nguru
Dosso
Koupéla
Fada N'Gourma
Malanville
Kano
Potiskum
Maiduguri
N'DJAMENA
Cinkassé
Kandi
Zaria
Suleja
Kaduna
Gombe
Bauchi
Maroua
Bongor
Mango
Djougou
Parakou
Minna
Jos
Tamale
Sokodé
Tchaourou
Ilorin
ABUJA
Doba
Moundou
Savalou
Lokoja
Makurdi
Ibadan
Okpella
NIGERIA
Ngaoundéré
Cotonou
Lagos
Enugu
Kpong
LOMÉ
PORTO NOVO
Benin City
Tema
ACCRA
Port Harcourt
Calabar
CAMEROON
Bertoua
Elmina
Port of Tema
Port of Lomé
Port of Cotonou
Port of Lagos
Buea
Douala
MALABO
Edéa
YAOUNDÉ
Port of Port Harcourt
Port of Malabo
Port of Douala
Kribi
Dangote Fertilizer
OCP Africa
Brass Fertilizer
New blender near Port Harcourt

FUTURE PROJECTS PROFILES

BURKINA FASO

BOBO DIOULASSO — **FASO FERT**

Project: Dolomite crushing equipment
Expected capacity: Unknown
Expected completion: 2022-2023
Contact: **Pascal Le Moel**
Managing Director
+226 77 25 00 25
fasofert.dg@gmail.com

KOUPÈLA — **SOCIÉTÉ D'EXPLOITATION DES PHOSPHATES DU BURKINA (SEPB)**

Project: Blender
Expected capacity: 120,000 mtpy
Expected completion: 2022
Contact: **Djiguemde Oumarou**
Head of Agricultural Experimentation & Extension Service
+226 25 32 46 54, +226 24 79 10 16
oumaroudjiguemde@yahoo.fr

BOBO DIOULASSO — **TROPIC AGRO CHEM**

Project: Blender
Expected capacity: Unknown
Expected completion: 2022-2023
Contact: **Al Hassane Sienou**
CEO
+226 70 20 61 58
tropic_agrochem1@yahoo.fr

CÔTE D'IVOIRE

YAMOUSSOUKRO — **IVOIRE FORMULATION**

Project: Weighcont Blender Line 5
Expected capacity: 120 mtph
Expected completion: 2022-2023
Contact: **Armand Konan**
CEO
+225 07 07 11 06 96
armand.konan@agritecgroup.com

ABIDJAN — **OCP CÔTE D'IVOIRE SA**

Project: Blender
Expected capacity: 100 mtph
Expected completion: 2022
Contact: **Aziz Diallo**
Country Manager
+225 07 84 01 82 72
aa.diallo@ocpafrica.com

MALI

BOUREM — **SANGOYE**

Project: Crusher, Dryer and Washing Unit, Granulator (Phosphate)
Expected capacity: 100,000 mtpy
Expected completion: 2022-2023
Contact: **Moussa Diabaté**
PDG
+223 66 75 30 14
moussapind@hotmail.fr

NIGER

DOSSO — **SOAPAM SA**

Project: Layco DW System + Nectar Bagging System
Expected capacity: 70 mtph
Expected completion: 2022-2023
Contact: **Dah Yves Francis E.**
Managing Director
+226 70 74 50 34
yvesdah@yahoo.fr

NIGERIA

ABUJA (PLOT 859, IDU NDUSTRIAL LAYOUT) — **AGTHO MERCHANT & COMPANY LTD**

Project: Blender
Expected capacity: 95 mtph
Expected completion: 2021
Contact: **Boniface Elewodalu**
Managing Director and CEO
+234 80 33 12 06 95, +234 81 82 82 70 22
boniface@agthonasarafertilizer.com

BAYELSA — **BRASS FERTILIZER**

Project: Urea
Expected capacity: 1.3 million mtpy
Expected completion: Unknown
Contact: info@brassfertilizer.com

LAGOS, LEKKI — **DANGOTE FERTILIZER**

Project: Urea
Expected capacity: 2.8 million mtpy
Expected completion: 2021
Contact: **Aliyu Suleiman**
Corporate Strategy Lead
+234 80 70 49 24 69
aliyu.suleiman@dangote-group.com

LAFIA — **NASARAWA BLENDING PLANT**

Project: Blender
Expected capacity: 40 mtph
Expected completion: 2021
Contact: **Jamil Zakari**
Commissioner of Agriculture

NEAR KANO — **NEW BLENDER 1**

Project: Layco-Pro Declining Weight Blend & Bag Plant
Expected capacity: 90 mtph
Expected completion: 2021
Contact: Company name to be disclosed upon completion

PORT HARCOURT — **NEW BLENDER 2**

Project: Layco-Pro Declining Weight Blend & Bag Plant
Expected capacity: 150 mtph
Expected completion: 2021
Contact: Company name to be disclosed upon completion

NEAR KANO — **NEW BLENDER 3**

Project: Layco-Pro Declining Weight Blend & Bag Plant
Expected capacity: 90 mtph
Expected completion: 2021
Contact: Company name to be disclosed upon completion

ABUJA — **NEW BLENDER 4**

Project: Bagtech Blender
Expected capacity: 75 mtph
Expected completion: 2021
Contact: Company name to be disclosed upon completion

ABUJA — **NEW BLENDER 5**

Project: Bagtech Blender
Expected capacity: 75 mtph
Expected completion: 2021
Contact: Company name to be disclosed upon completion

KADUNA — **OCP AFRICA**

Project: Blender
Expected capacity: 100 mtph
Expected completion: Build: 2018, Operating: 2019
Contact: **Caleb Usoh**
Country Manager, OCP Nigéria
+234 70 31 78 11 15
c.usoh@ocpafrica.com

OGUN — **OCP AFRICA**

Project: Blender
Expected capacity: 100 mtph
Expected completion: Build: 2018, Operating: 2019
Contact: **Caleb Usoh**
Country Manager, OCP Nigéria
+234 70 31 78 11 15
c.usoh@ocpafrica.com

SOKOTO — **OCP AFRICA**

Project: Blender
Expected capacity: 100 mtph
Expected completion: Build: 2018, Operating: 2019
Contact: **Caleb Usoh**
Country Manager, OCP Nigéria
+234 70 31 78 11 15
c.usoh@ocpafrica.com

SENEGAL

DAKAR — **AMAFRIQUE SUARL**

Project: Crusher, Dryer and Washing Unit, Granulator (Phosphate)
Expected capacity: 100 mtpd
Expected completion: 2021
Contact: **Ndiaye Astou Dramé**
DCOI
+221 775 711 904
a.drame@amafric.com

DAKAR — **TSE**

Project: Blender
Expected capacity: Unknown
Expected completion: Unknown
Contact: **Abdourahmane Bibi Ndjaye**
DC
+221 773 000 247
bibi.tse@gmail.com

SIERRA LEONE

FREETOWN — **MANGARA AGRIBUSINESS COMPANY**

Project: Bulk Blender
Expected capacity: 60 mtph
Expected completion: 2021
Contact: **Sinkarie Sesay**
Managing Director
+232 76 43 31 14, +232 76 15 87 09
sinkarie.sesay@mangara-sl.com

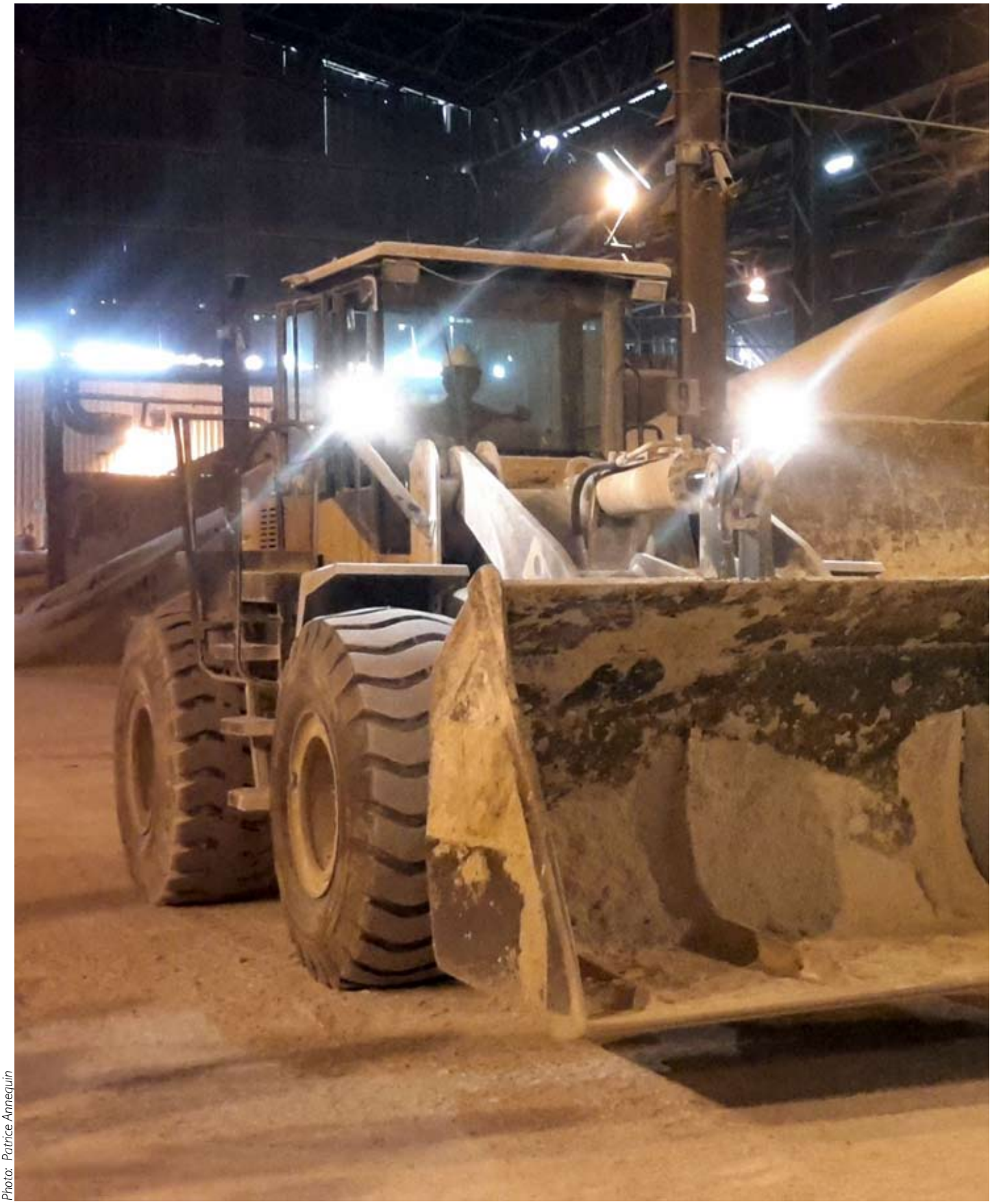
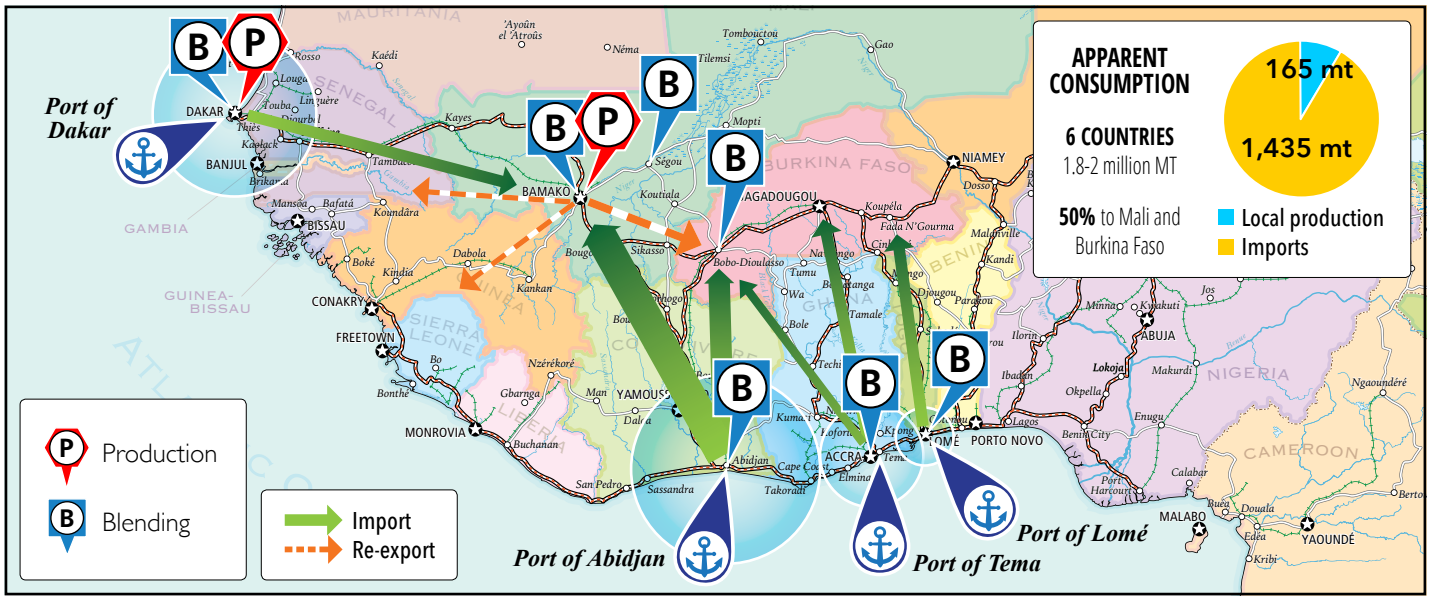


Photo: Patrice Annequin

4. LOGISTICS AND COSTS

Photo: Patrice Annequin

WEST AFRICA TRADE CORRIDORS



Main fertilizer imports and re-export flows in West Africa (2019 figures in '000 tons) for the six countries surveyed.

Fertilizer logistics and especially road transport costs constitute an important component in the determination of fertilizer prices. That is why it is important for importers to know the different existing trade corridors in order to best manage the conveyance of their product from a given port to their customers in landlocked countries.

The six major ports in West Africa through which fertilizers are shipped to these landlocked ECOWAS zones are the ports of Dakar, Senegal; Abidjan, Côte d'Ivoire; Tema, Ghana; Lomé, Togo; Cotonou, Benin; and Lagos, Nigeria. All these ports can serve one or more of the three landlocked countries in the ECOWAS region: Mali, Burkina Faso and Niger. Mali and Burkina Faso are important consumers of fertilizers – together they use more than 450,000 metric tons (mt) annually. Niger however is still a low consumer of fertilizers, at less than 50,000 mt per year.

All of the North/South routes linking ports to landlocked countries are called trade corridors. The organization of road and rail networks sometimes allows landlocked countries to have multiple options for fertilizer transport.

DISTANCE

The choice of the corridor and port is often determined by geographical location (distance between the port and the supply destination) and quality of roads (Table 1).

PORT INFRASTRUCTURE

Characteristics of a port and its congestion status also affects the choice of corridor. Port infrastructure is generally assessed according to the characteristics in Table 2. Other factors affecting the choice of route include the pace and operational capacity of a port's offloading equipment and whether it has busy operating schedules at the projected date of product shipment.

In the end, the use of flatbed trucks of 35 mt (ECOWAS standard) remains the most developed means of transportation along these corridors, even if some countries such as Côte d'Ivoire, Burkina Faso, Senegal, Benin and Togo have railway tracks. It is important to note that renovation and construction work on a 3,000 km railway is ongoing to link Cotonou, Niamey, Ouagadougou, Abidjan and Lomé, and its completion should offer an additional transportation option.

Table 1. *Distances from ports to capital cities*

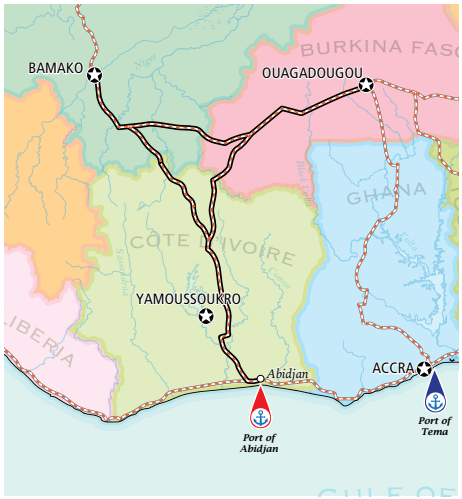
Port	Bamako	Ouagadougou	Niamey
Abidjan	1,184 km	1,176 km	1,629 km
Cotonou	2,036 km	1,015 km	1,056 km
Dakar	1,431 km	2,401 km	2,854 km
Lagos	1,428 km	852 km	799 km
Lomé	1,873 km	970 km	1,136 km
Tema	2,012 km	1,042 km	1,495 km

Table 2. *Port infrastructure characteristics*

Description	Abidjan	Dakar	Lomé	Tema
Storage area (m^2)	250,000	216,000	200,000	355,000
Bonded warehouse (m^2)	134,614	98,000	110,000	25,000
Max vessel draught (m)	8.2-9.45	8-11	11.5	8.7-10
Max bulk vessels (t)	30,000	30,000	60,000	30,000
Bulk unload. cap. (t/day)	3,000-5,000	1,500-2,000	n/a	3,900
Fert. imports in 2018 (t)	356,000	323,000	172,000*	248,000

** data for 2017*

PORT OF ABIDJAN (PAA)



FERT. IMPORTS VIA ABIDJAN

Year	2016	2017	2018
Customs clearance	321.9	299.5	228.7
Hinterland transit	182.1	250.1	128.2
Total	504.0	549.6	356.9

Figures given in thousands of tons

KEY CAPACITIES FOR PORT OF ABIDJAN

Storage area	Bonded warehouse	Bulk fertilizer unloading capacity	Bulk waiting time (days)	Time on dock, bulk carrier in port (days)*
19 areas 250,000 m²	18 warehouses 134,614 m²	3,000 to 5,000 tons/day* 2 docks	Average: 3 Min: 0.6 – Max: 37	Average: 5.4 Min: 0.7 – Max: 9

** Average waiting time during the period from May 2018 to May 2019 for dry bulk, according to www.marinetraffic.com.*

IMPORT CHARGES VIA THE PORT OF ABIDJAN — VALUES IN USD PER TON

Description of charge	Simple product (import Urea, DAP, MAP, etc.)	Complex product (import NPK formulated at source)	Abidjan formulation (import 90% of ingredients)	Mali or Burkina formul. (import 90% of ingredients via PAA)
FOB reference price	300	300	260	260
Sea freight (bulk carrier) + insurance	40	40	35	35
CIF reference price	340	340	295	295
Port charges	42	42	25	35
Road transit (Abidjan→Mali/BF)				65
Customs clearance	8	22	7	7
Storage and handling costs of the importer	10	10	35	25
Administrative and financial costs of the importer	25	25	32	30
Importer profit	30	30	30	30
Price ex-warehouse importer/blender	455	469	429	487
Transport to the distribution area	CI: 25 Mali/BF: 65	CI: 25 Mali/BF: 65	CI: 25 Mali/BF: 65	Mali/BF: 10
Administrative and financial costs of the distributor	10	10	10	10
Distributor profit	15	15	15	15
Price from warehouse to distributor production area	CI: 505 Mali/BF: 545	CI: 519 Mali/BF: 559	CI: 479 Mali/BF: 519	Mali/BF: 522
Price ex-warehouse to distributor production area (in FCFA per 50 kg bag)	CI: 14,650 Mali/BF: 15,800	CI: 15,050 Mali/BF: 16,200	CI: 13,900 Mali/BF: 15,050	Mali/BF: 15,150

FERTILIZER IMPORTING PROCEDURES VIA THE PORT OF ABIDJAN

BEFORE SIGNING THE IMPORT CONTRACT

1.1 Fertilizer import contract (DGPSA) ..... *Mail: 300,000 F/3 yrs*

1.2 Annual import code (Min. Co.) ..... *Mail: 30,000 F/year*

1.3 Supplier quotation ..... *Online*

1.4 VAT2 exoneration (DGPSA) ..... *Mail: 100,000 F/FDI*

1.5 Import Prior Authorization (API) (DGPSA via GUCE) ..... *Online: 5,000 F/350 tons*

1.6 Import Declaration Form (FDI) (GUCE) ..... *Online: 500,000 F/FDI*

PRIOR TO SHIPMENT

2.1 Import contract signature ..... *In person, by broker or via bank*

2.2 Contract with maritime carrier+insurance ..... *In person or online*

2.3 Compliance check of the shipment by a certified controlling company with mandatory physical inspection of fertilizers – obtain a Certificate of Conformity (COC) ..... *Provider: Between 0.3% and 0.4% of FOB*

MARITIME TRANSPORT

3.1 Transmit COC to VOC ..... *Online: Free of charge*

3.2 Cargo tracking note (CTN) from the OIC ..... *Online: 90 EUR/BL (bulk)*

3.3 Obtain a Value Classification Final Report (RFCV) at GUCE ..... *Online: Free of charge*

3.4 Freight forwarder and port handling contracts ..... *Online or in person: negotiated rates*

3.5 Local insurance for unloaded goods ..... *Online or in person: 0.15% to 0.3% of CIF*

UNLOADING

4.1 Request to berth and approach by consignee, then berthing ..... *At the shipowner's expense*

4.2 Onboard handling (unloading) ..... *At the shipowner's expense (unless cargo contract with onboard delivery)*

4.3 Bill of lading (BL) exchange from consignee to the freight forwarder ..... *In person*

4.4 Land handling (transportation, bagging, storage, trucking, etc., in port) ..... *Cargo handler rates*

CLEARANCE OR TRANSIT

5.1 Direct import (CI customs clearance) Customs entry via SYDAM (Sydonia World) → Customs payment → Receipt Good to Remove (BAE) ..... *Online + in person - Customs fee + HAD*

5.2 Direct transit (clearance in Mali or BF) EX3000/T1 declaration (customs CI+Mali/BF) via SYDAM → Transit warehouse storage → RGF payment +installation GPS → BAE tag ..... *Online + in person - 500 F/tons (EMACI) +0.5% CIF +12,500 F/truck*

EX-PORT & DELIVERY

TO NATIONAL MARKET:

6.1 Port delivery: unpack and/or truck loading by the importer or its carrier in the port, exit with BAE ..... *In person: Negotiated transport cost*

6.2 Delivery to importer's warehouse: Shipping carrier (containers), freight forwarder, or land handler delivers to importer ..... *In person: Cost included in freight forwarding service*

TO HINTERLAND MARKET:

6.3 Delivery in Mali or BF: Freight forwarder manages transport to importer's warehouse and pays customs fees at land border ..... *In person: Cost included in freight forwarding service*

TRANSIT TIMES VIA THE PORT OF ABIDJAN

BEFORE SIGNING THE IMPORT CONTRACT

Obtaining an importer code: 1 to 2 days

Obtaining approval: about 1 month, carried out before the import season

API and FDI: 2 to 5 days

PRIOR TO SHIPMENT

From contract signing to ship loading: 5 to 10 days

MARITIME TRANSPORT

Shipping time: depending on the country of origin, from 5 days (i.e., Morocco) to 30 days (i.e., the Black Sea or China)

UNLOADING

From arrival of the ship to unloading: 5 to 40 days, depending on dock congestion

EX-PORT & DELIVERY

TO NATIONAL MARKET:

Release for local consumption: 10 to 25 days from unloading to exit from the port

TO HINTERLAND MARKET:

Transit: 20 to 45 days from unloading to removal from the port, ***plus*** 4 to 10 days to exit from the port and delivery to Mali or Burkina Faso

PORT OF DAKAR (DPA)

FERT. IMPORTS VIA DAKAR

Year	2016	2017	2018
Customs clearance	105	121	109
Hinterland transit	345	209	214
Total	450	330	323

Figures given in thousands of tons.
Source: Senegal Customs + est. Nitidæ

KEY CAPACITIES FOR DAKAR PORT AUTHORITY

Storage area	Bonded warehouse	Bulk fertilizer unloading capacity	Bulk waiting time (days)	Time on dock, bulk carrier in port (days)*
216,000 m²	98,000 m²	1,500 to 2,000 tons/day x 2 docks	Average: 2.8 Min: 0.1 – Max: 15	Average: 5.3 Min: 0.3 – Max: 11

** Average waiting time during the period from May 2018 to May 2019 for dry bulk, according to www.marinetraffic.com.*

IMPORT CHARGES VIA THE DAKAR PORT AUTHORITY — VALUES IN USD PER TON

Description of charge	Simple product (import Urea, DAP, MAP, etc.)	Complex product (import NPK formulated at source)	Formulation in Dakar Suburban (import 90% of ingredients)	Formulation in Mali (import 90% of ingredients via PAD)
FOB reference price	300	300	260	260
Sea freight (bulk carrier) + insurance	38	38	33	33
CIF reference price	338	338	293	293
Port charges	37	37	25	32
Road transit (Dakar→Mali)				75
Customs clearance	8	22	7	7
Storage and handling costs of the importer	12	12	33	24
Administrative and financial costs of the importer	25	25	32	30
Importer profit	30	30	30	30
Price ex-warehouse importer/blender	450	464	420	489
Transport to the distribution area	→SN: 20 →Mali: 70	→SN: 20 →Mali:70	→SN: 20 →Mali: 70	→Mali Central: 10 →Mali South: 15
Administrative and financial costs of the distributor	10	10	10	10
Distributor profit	15	15	15	15
Price from warehouse to distributor production area	Senegal: 495 Mali: 545	Senegal: 509 Mali: 559	Senegal: 465 Mali: 515	Mali Central: 524 Mali South: 529
Price ex-warehouse to distributor production area (in FCFA per 50 kg bag)	Senegal: 14,350 Mali: 15,800	Senegal: 14,750 Mali: 16,200	Senegal: 13,500 Mali: 14,950	Mali Central: 15,200 Mali South: 15,350

FERTILIZER IMPORTING PROCEDURES VIA THE DAKAR PORT AUTHORITY

BEFORE SIGNING THE IMPORT CONTRACT

1.1 Fertilizer approval (ISRA) ..... *If formula not yet approved: File forms*

1.2 Importer card with the DCI - Min. Co. .....*Mail: 41,500 F/year*

1.3 Supplier quotation ..... *Online*

1.4 Preliminary Import Declaration (DPI) on ORBUS..... *Online: 18,500 FCFA/DPI*

PRIOR TO SHIPMENT

2.1 Import contract signature ..... *In person, by broker or via bank*

2.2 Contract with maritime carrier+insurance..... *In person or online*

2.3 Verification of compliance at shipment by COTECNA and transmission of a Certificate of Compliance before shipping ..... *Service provider: between 0.3% and 0.4% of FOB*

MARITIME TRANSPORT

3.1 Transmission of the Certificate of Conformity on ORBUS..... *Online: Free of charge*

3.2 Cargo Tracking Slip (CTS) with COSEC..... *Online: 32,500 F/300t*

3.3 Establishment of a detailed note in GAINDE..... *Online: Free of charge*

3.4 Freight forwarder and port handling contracts..... *Online or in person: Negotiated rates*

3.5 Local insurance for unloaded goods .....*Online or in person: 0.15% to 0.3% of CIF*

UNLOADING

4.1 Request to berth the vessel and consignee's procedures, then berthing .....*At the shipowner's expense*

4.2 Onboard handling (unloading) .....*At the shipowner's expense (unless freight contract with delivery on board)*

4.3 Bill of lading (BL) exchange between consignee and freight forwarder..... *In person*

4.4 Land handling (transport, bagging, storage, loading trucks, etc., in the port) .....*Handling agent's rates*

CLEARANCE OR TRANSIT

5.1 Direct import (Senegal customs clearance) Customs declaration via GAINDE Customs payment → obtaining a Good to Collect (BAE) ..... *Online + in person - Customs fees + HAD*

5.2 Direct transit (customs clearance in Mali) S110 or TRIE/ T1 (customs SN+Mali) via GAINDE and Sydonia (Mali) → Storage in transit warehouse → RGF payment or customs bond/GPS beacon installation → BAE..... *Online + in person - 500 F/truck+FGR 0.25% CIF+70,000 F/truck*

EX-PORT & DELIVERY

TO NATIONAL MARKET:

6.1 Delivery in port: unloading and/or loading trucks from the importer or his carrier in the port, exit with BAE ..... *In person: Negotiated transport cost*

6.2 Delivery to the importer's warehouse: the sea carrier (containers), freight forwarder, or land handler delivers to the importer .....*In person: Cost included in services*

TO HINTERLAND MARKET:

6.3 Delivery to Mali: the freight forwarder manages the transport to the importer's warehouse and pays customs duties at the land border .....*In person: Cost included in freight forwarding service*

TRANSIT TIMES VIA THE DAKAR PORT AUTHORITY

BEFORE SIGNING THE IMPORT CONTRACT

Obtaining an importer's card: about 1 week, before import season

API: 1 to 3 days

PRIOR TO SHIPMENT

From import contract signing to ship loading: 5 to 10 days

MARITIME TRANSPORT

Shipping time: depending on the country of origin, from 4 days (i.e., Morocco) to 30 days (i.e., the Black Sea or China)

UNLOADING

From arrival of the ship to unloading: 4.5 to 20 days, depending on traffic congestion

EX-PORT & DELIVERY

TO NATIONAL MARKET:

Release for local consumption: 5 to 15 days from unloading to exit from the port

TO HINTERLAND MARKET:

Transit: 5 to 18 days from unloading to removal (exit) from the port, ***plus*** 4 to 12 days to exit from the port and delivery to Mali

PORT OF LOMÉ (PAL)

FERT. IMPORTS VIA LOMÉ

Year	2016	2017	2018
Customs clearance	75	136	ND
Hinterland transit	70	36	ND
Total	145	172	ND

Figures given in thousands of tons.

KEY CAPACITIES FOR LOMÉ PORT AUTHORITY

Storage area	Bonded warehouse	Bulk carrier anchorage time (days)	Bulk carrier berthing time (days)
200,000 m²	110,000 m²	Average: 2.4 Min: 0.1 – Max: 26.5	Average: 4.45 Min: 0.1 – Max: 22.2

**Average waiting time during the period from May 2018 to May 2019 for dry bulk, according to www.marinetraffic.com.*

IMPORT CHARGES VIA THE LOMÉ PORT AUTHORITY — VALUES IN USD PER TON

Description of charge	Simple product (import Urea, DAP, MAP, etc.)	Complex product (import NPK formulated at source)	Formulation in the Lomé Free Zone (import 90% of ingredients)	Formulation in Burkina Faso (import 90% of ingredients via PAL) with blending in Bobo Dioulasso
FOB reference price	300	300	260	260
Sea freight (bulk carrier) + insurance	41	41	36	36
CIF reference price	341	341	296	296
Port charges	36	36	20	30
Road transit (Lomé→Bobo Dioulasso)				70
Customs clearance	8	22	7	7
Storage and handling costs of the importer	9	9	30	25
Administrative and financial costs of the importer	25	25	32	30
Importer profit	30	30	30	30
Price ex-warehouse importer/blender	449	463	415	488
Transport to the distribution area	→Togo: 20 →BF Central: 58	→Togo: 20 →BF Central: 58	→Togo: 20 →BF Central: 58	→BF Southwest: 5 →BF Central: 10
Administrative and financial costs of the distributor	10	10	10	10
Distributor profit	15	15	15	15
Price from warehouse to distributor production area	Togo: 494 BF Central: 532	Togo: 508 BF Central: 546	Togo: 460 BF Central: 498	BF Southwest: 518 BF Central: 523
Price ex-warehouse to distributor production area (in FCFA per 50 kg bag)	Togo: 14,350 BF Central: 15,450	Togo: 14,750 BF Central: 15,850	Togo: 13,350 BF Central: 14,450	BF Southwest: 15,000 BF Central: 15,200

FERTILIZER IMPORTING PROCEDURES VIA THE LOMÉ PORT AUTHORITY

BEFORE SIGNING THE IMPORT CONTRACT

1.1 Annual Importer Card (CCIT) ..... *In person: 15,000 or 38,500 FCFA/year*

1.2 Supplier quotation ..... *Online*

1.3 Pre-Declaration of Import (DPI) to Customs via SEGUCE..... *Online: 5,000 F/350 tons*

PRIOR TO SHIPMENT

2.1 Import contract signature ..... *In person, by broker or via bank*

2.2 Contract with maritime carrier+insurance..... *In person or online*

2.3 Conformity check before boarding by Bureau Veritas (BIVAC) and issuance of a Certificate of Conformity (ADV) ..... *Service Provider: 1% of FOB*

MARITIME TRANSPORT

3.1 Transmission of ADV via SEGUCE..... *Online: Free of charge*

3.2 Issuance of e-cargo tracking slip (e-CTS) from CNCT..... *Online: 25 or 100 EUR/BL*

3.3 Contracts with freight forwarder and port handler ..... *Online or in person: Negotiated rates*

3.4 Local insurance for goods .....*Online or in person: 0.15% to 0.3% of CIF*

3.5 Transmission of transit notice via SEGUCE by consignee ..... *At the expense of the shipowner*

UNLOADING

4.1 Berthing by consignee .....*At the shipowner's expense*

4.2 Onboard handling (unloading), issuance of VAQ in SEGUCE .....*At the shipowner's expense*

4.3 Bill of lading (BL) exchange from consignee to freight forwarder; issuance of approval slip (BAD) in SEGUCE.....*In person and via SEGUCE - HAD*

4.4 Land handling (transport, bagging, storage, truck loading, etc., in port ..... *Handling fees*

CLEARANCE OR TRANSIT

5.1 Direct import (Togo customs clearance) – Declaration by the forwarder via Syndonia → Obtain BAED → Generation of a DFU in SEGUCE → Payment of the DFU .....*Online + in person - Customs fee + HAD*

5.2 Direct transit (BF customs clearance) – EX3000/T1 declaration (customs Togo+BF) via SEGUCE → Transit warehouse storage → RGF payment → BSTR+CTS payment → GPS slip or escort installation → BAS ..... *Online + in person - 500 F/tons (EMACI) +0.5% CIF +12,500 F/truck*

EX-PORT & DELIVERY

TO NATIONAL MARKET:

6.1 Designation of carrier for port exit → Obtain Good to Load Carrier (BACT) → Obtain Good to Exit (BAS) → Import delivery..... *In person: Negotiated transport cost*

TO HINTERLAND MARKET:

6.2 **Delivery to Burkina Faso:** the freight forwarder manages the transport to the importer's warehouse and pays customs duties at the land border .....*In person: Cost included in freight forwarding service*

TRANSIT TIMES VIA THE LOMÉ PORT AUTHORITY

BEFORE SIGNING THE IMPORT CONTRACT

Obtaining an importer card: about 1 week before the import season

DPI: Immediate, only declarative

PRIOR TO SHIPMENT

From import contract signing to ship loading: 5 to 10 days

MARITIME TRANSPORT

Shipping time: depending on the country of origin, from 6 days (i.e., Morocco) to 30 days (i.e., the Black Sea or China)

UNLOADING

From arrival of the ship to unloading: 3 to 38 days, depending on traffic congestion

EX-PORT & DELIVERY

TO NATIONAL MARKET:

Release for local consumption: 3 to 5 days from unloading to exit from the port

TO HINTERLAND MARKET:

Transit: 5 to 8 days from unloading to removal from the port (port exit) ***plus*** 3 to 9 days to exit from the port and delivery to Burkina Faso

PORT OF TEMA (TPA)

FERT. IMPORTS VIA TEMA

Year	2016	2017	2018
Customs clearance	191	292	221
Hinterland transit	1	190	27
Total	192	483	248

Figures given in thousands of tons
Source: Ghana Shippers Authority

KEY CAPACITIES FOR TEMA PORT AUTHORITY

Storage area	Bonded warehouse	Bulk fertilizer unloading capacity	Bulk carrier anchorage time (days)	Time on dock, bulk carrier in port (days)*
355,000 m²	25,000 m²	3,900 tons/day	Average: 2 Min: 0.1 - Max: 14.2	Average: 4.8 Min: 1 - Max: 9

** Average waiting time during the period from May 2018 to May 2019 for dry bulk, according to www.marinetraffic.com.*

IMPORT CHARGES VIA THE TEMA PORT AUTHORITY — VALUES IN USD PER TON

Description of charge	Simple product (import Urea, DAP, MAP, etc.)	Complex product (import NPK formulated at source)	Formulation in Tema (import 90% of ingredients)	Formulation in Burkina Faso (import 90% of ingredients via PAL) with blending in Bobo Dioulasso
FOB reference price	300	300	260	260
Sea freight (bulk carrier) + insurance	41	41	36	36
CIF reference price	341	341	296	296
Port charges	36	36	20	30
Road transit (Tema→Bobo Dioulasso)				60
Customs clearance	7	21	6	6
Storage and handling costs of the importer	8	8	29	25
Administrative and financial costs of the importer	24	24	31	30
Importer profit	30	30	30	30
Price ex-warehouse importer/blender	446	460	412	477
Transport to the distribution area	→Ghana: 20 →BF Central: 55	→Ghana: 20 →BF Central: 55	→Ghana: 20 →BF Central: 55	→BF Southwest: 5 →BF Central: 15
Administrative and financial costs of the distributor	→Gh: 8; →BF: 10	→Gh: 8; →BF: 10	→Gh: 8; →BF: 10	→BF: 10
Distributor profit	→Gh: 10; →BF: 15	→Gh: 10; →BF: 15	→Gh: 10; →BF: 15	→BF: 15
Price from warehouse to distributor production area	Ghana: 484 BF Central: 526	Ghana: 498 BF Central: 540	Ghana: 450 BF Central: 492	BF Southwest: 512 BF Central: 517
Price ex-warehouse to distributor production area (in FCFA per 50 kg bag)	Ghana: 14,050 BF Central: 15,250	Ghana: 14,450 BF Central: 15,650	Ghana: 13,050 BF Central: 14,250	BF Southwest: 14,850 BF Central: 15,000

FERTILIZER IMPORTING PROCEDURES VIA THE TEMA PORT AUTHORITY

BEFORE SIGNING THE IMPORT CONTRACT

1.1 Creation of the company and obtaining a TIN (Taxpayer Identification Number) from the GIPC ..... *File in person: 1,050 to 16,800 GHS*

1.2 Obtain a fertilizer import permit from PFRD (MOFA), valid for 6 months ..... *File in person: 3,000 GHS/3 years*

1.3 Supplier quotation ..... *Online*

1.4. Obtain UCR (Unique Consignment Reference) on GCNet eMDA..... *Online: Free of charge*

PRIOR TO SHIPMENT

2.1 Import contract signature ..... *In person, by broker or via bank*

2.2 Contract with maritime carrier+insurance..... *In person or online*

2.3 Import declaration (eIDF) on GCNet eMDA ..... *Online: Free of charge*

MARITIME TRANSPORT

3.1 Contract with freight forwarder and port handler..... *Online or in person: Negotiated rates*

3.2 Local insurance for unloaded goods ..... *Online or in person: 0.15% to 0.3% of CIF*

3.3 Transmission of a forecast of the ship's stopover via GCMS by the consignee ..... *At the expense of the shipowner*

UNLOADING

4.1 Berthing by consignee ..... *At the expense of the shipowner*

4.2 Onboard handling (unloading) ..... *At the expense of the shipowner (except in special cases)*

4.3 Exchange of bill of lading (BL) from consignee to freight forwarder..... *Physically - HAD*

4.4 Land handling (transport, bagging, storage, truck loading, etc., in the port)..... *Handling agent's rates*

4.5 Verification of compliance by a GSA8-approved company..... *In person: 15 GHS/ton*

CLEARANCE OR TRANSIT

5.1 Direct import (Ghana customs clearance) – Declaration of value (CCVR) by the forwarder or importer in GCNet → Payment of port and customs fees via GCNet → Obtain authorization for customs clearance..... *Online + in person - port fees + customs fee + HAD*

5.2 Direct transit (BF customs clearance) – EX3000/T1 declaration (GH+BF customs) via GCNet → Transit warehouse storage → RGF payment to SIC → CBC12 payment → GPS beacon installation by CEPS → Port exit..... *Online + in person - 0.92 $/t + 0.5% CIF+7.5 $/truck+45 $/truck*

EX-PORT & DELIVERY

TO NATIONAL MARKET:

6.1 Designation of carrier for port exit → Request exit authorization from GPHA → Exit authorization → Import delivery..... *In person: Negotiated transport cost*

TO HINTERLAND MARKET:

6.2 **Delivery to Burkina Faso:** the freight forwarder manages the transport to the importer's warehouse and pays customs duties at the land border ..... *In person: Cost included in freight forwarding service*

TRANSIT TIMES VIA THE TEMA PORT AUTHORITY

BEFORE SIGNING THE IMPORT CONTRACT

Issuance of fertilizer import license: about 1 month before the import season

UCR: Immediate, only declarative

PRIOR TO SHIPMENT

From contract signing to ship loading: 5 to 10 days

MARITIME TRANSPORT

Shipping time: depending on the country of origin, from 6 days (i.e., Morocco) to 30 days (i.e., the Black Sea or China)

UNLOADING

From arrival of the ship to unloading: 3 to 15 days, depending on traffic congestion

EX-PORT & DELIVERY

TO NATIONAL MARKET:

Release for local consumption: 3 to 10 days from unloading to exit from the port

TO HINTERLAND MARKET:

Transit: 5 to 10 days from unloading to removal from the port (port exit), *plus* 2 to 8 days to exit from the port and delivery to Mali or Burkina Faso

THE FERTILIZER JOURNEY IN WEST AFRICA

Manufacturer/Trader → Importer/Blender → Distributor → Wholesaler → Retailer → Farmer

MARKETING FERTILIZER TO THE COASTAL COUNTRIES

FERTILIZER PRODUCTS

45% Straight products (urea, DAP, KCl, etc.)
180 to 700 USD/t

30% Blending ingredients (TSP, MAP, SoA, fillers, etc.)
100 to 400 USD/t

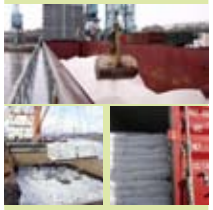
25% NPK compounds (NPK + S +/- micronutrients)
200 to 500 USD/t

SHIPPING

80% Bulk
20 to 40 USD/t

10% Break Bulk (50 kg bags or big bags)
25 to 45 USD/t

10% Containers (50 kg bags or big bags)
35 to 55 USD/t



UNLOADING

40% Bulk to dump truck
14 to 17 USD/t

40% BiBo Bulk In/Bag Out
28 to 32 USD/t

10% Bags to trailer truck/ train
18 to 21 USD/t

10% Containers ex-port to trucks
15 to 18 USD/t

PROCESSING & STORAGE

by importers and/or blenders

50% Blending +bagging
25 to 70 USD/t

40% Bagging
10 to 50 USD/t

5% Direct sales
2 to 5 USD/t

5% Direct imports
5 to 20 USD/t

GROUND TRANSPORT

deliveries to

5 to 75% Institutional markets/ subsidie
15 to 45 USD/t

5 to 60% Structured private market
15 to 45 USD/t

15 to 60% Open market
15 to 45 USD/t

SALES & DISTRIBUTION

5 to 35% Sales to large farms
Wholesale prices

5 to 10% Sales to cooperatives & farmers' groups
5 to 15 USD/t

5 to 30% Sales to distributors
15 to 30 USD/t

5 to 30% Retail sales to small & medium farmers
Retail prices:
375 to 600 USD/t

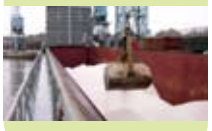
MARKETING FERTILIZER TO THE HINTERLAND (MALI, BURKINA FASO)

SHIPPING

75% Buik
20 to 40 USD/t

15% Break Bulk (50 kg bags or big bags)
25 to 45 USD/t

10% Container (50 kg bags or big bags)
35 to 55 USD/t



UNLOADING

60% BiBo Bulk In/Bag Out
28 to 32 USD/t

25% Bulk to dump truck
14 to 45 USD/t

15% Bags to trailer truck/ train
18 to 21 USD/t

5% Containers ex-port to trucks
15 to 18 USD/t

TRANSIT

70% Direct transit (land transport by forwarder)
60 to 100 USD/t

30% Indirect transit (hinterland importers buy from port importers)
65 to 105 USD/t

PROCESSING & STORAGE

by Importers and/or Blenders

55% Blending + bagging
20 to 50 USD/t

30% Bagging
5 to 40 USD/t

10% Direct sales
2 to 5 USD/t

5% Direct imports
5 to 20 USD/t

GROUND TRANSPORT

deliveries to

5 to 90% Institutional markets/ subsidie
15 to 45 USD/t

0 to 80% Structured private market
15 to 45 USD/t

10 to 45% Open market
15 to 45 USD/t

SALES & DISTRIBUTION

5% Sales to large farms
Wholesale prices

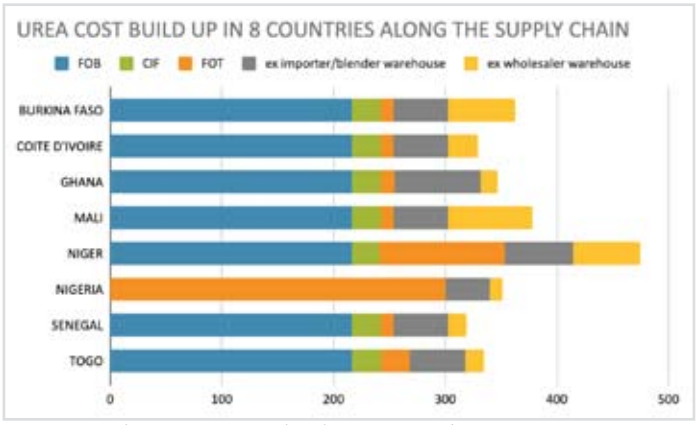
5% Sales to cooperatives & farmers' groups
5 to 15 USD/t

5 to 15% Sales to distributors
15 to 30 USD/t

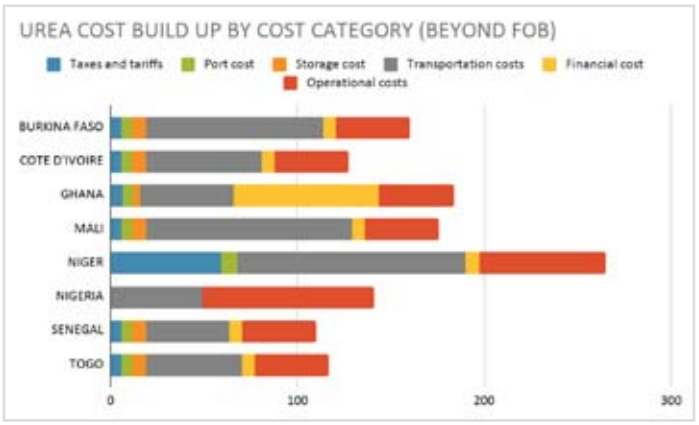
5 to 15% Retail sales to small & medium farmers
Retail prices:
475 to 600 USD/t

FERTILIZER COST ANALYSIS IN WEST AFRICA – THE CASE OF UREA

Costs for urea in the 8 countries analyzed ranged from $319 in Senegal to $475 in Niger. At $330 to $360 per ton delivered in most countries, domestic costs add between 50% and 85% to the current FOB price. With a cost of around $350 per ton of urea delivered in Kaduna, Nigeria, the only producer and consumer country, is on the average for the region.

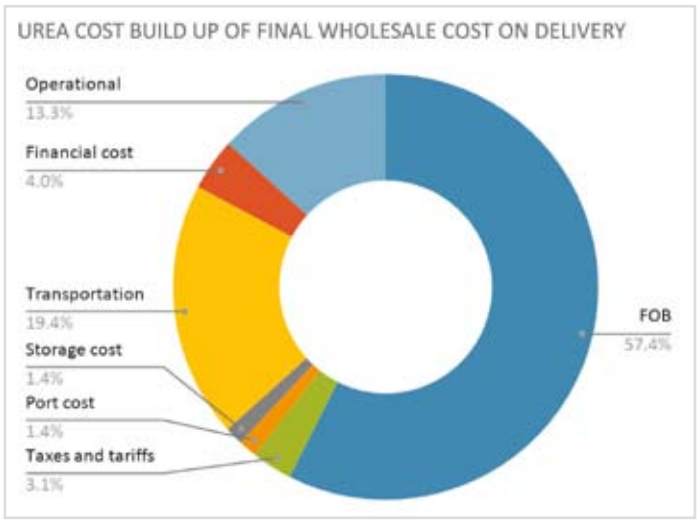


FOB: Free on Board; CIF: Cost, Insurance and Freight; FOT: Free on Truck



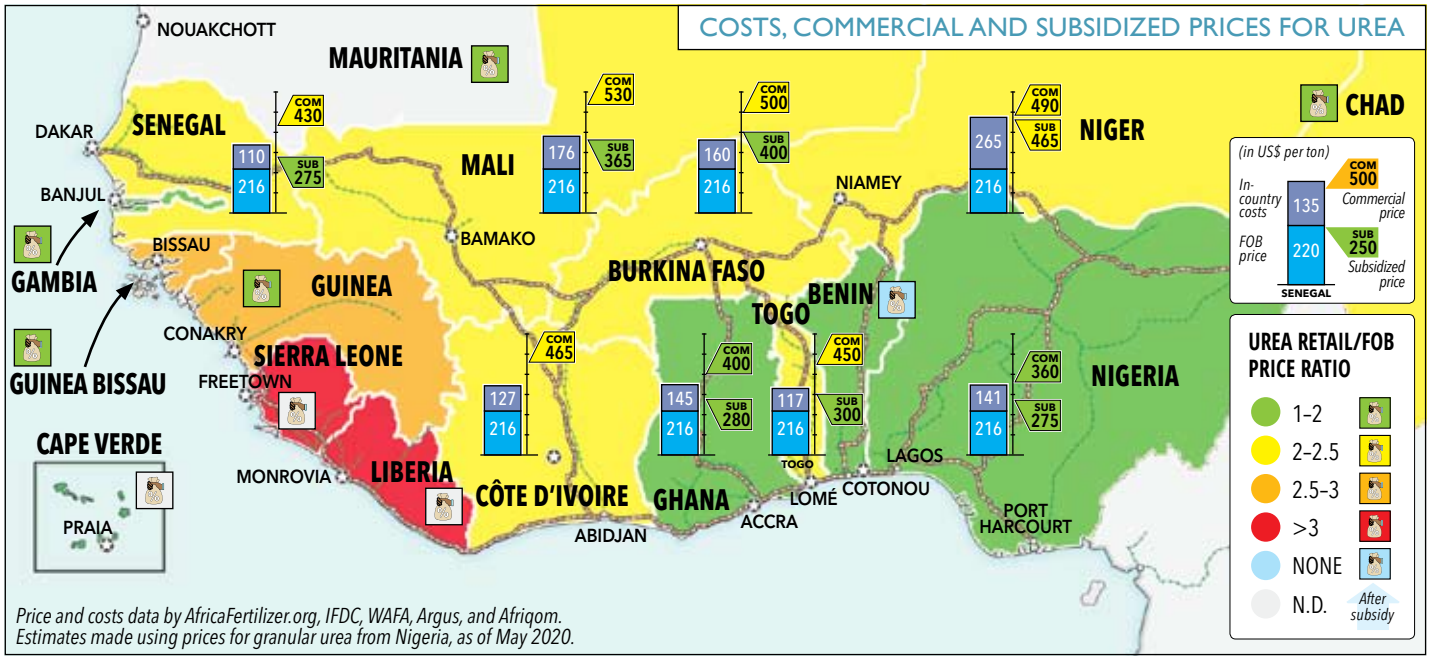
The model used also allows us to break down the costs by category in each of these 8 countries (transport costs, port costs, duties and taxes, storage costs, financial costs, and operational costs).

On average, the FOB price represents nearly 60% of the final cost of urea delivered to wholesale warehouses in the fertilizer consumption areas. While logistics costs (sea and land transport, handling) account for about 20% of the costs, operational costs (gross margins, salaries, taxes, incidentals, on-site handling, etc.) are limited to about 12%. Financial costs, duties and taxes are estimated at around 7% of the total cost, with significant variations from one country to another.



Assumptions used:

- *Average FOB price for the month of May 2020 of granulated urea from Nigeria, DAP from Morocco, and standard MOP from Baltic/Black Sea.*
- *Transport costs to the main consumption areas for each crop/country (e.g. Kaduna for urea and cereal formulas in Nigeria, Tamal√© in Ghana).*
- *Other costs (taxes, transport costs, bagging and blending costs, interest rates, etc.) adjusted to May 2020.*



Price and costs data by AfricaFertilizer.org, IFDC, WAFA, Argus, and Afriqom.
Estimates made using prices for granular urea from Nigeria, as of May 2020.

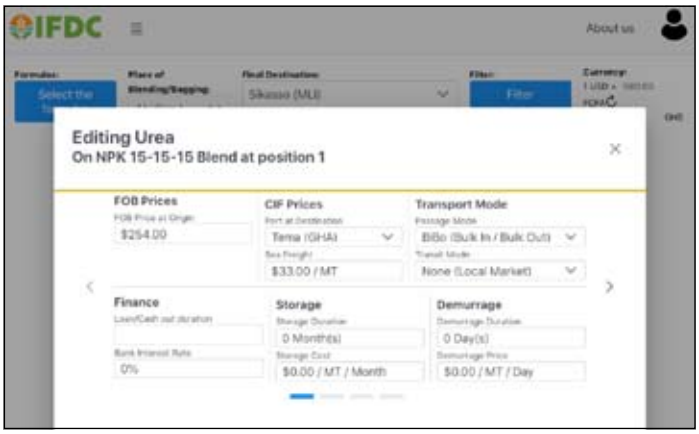
IFDC FERTILIZER COST SIMULATOR

Based on data and methodologies used to estimate fertilizer costs along the supply chain in West Africa, IFDC has released in September 2020 the first version of an online, and free to use Fertilizer Cost Simulator.

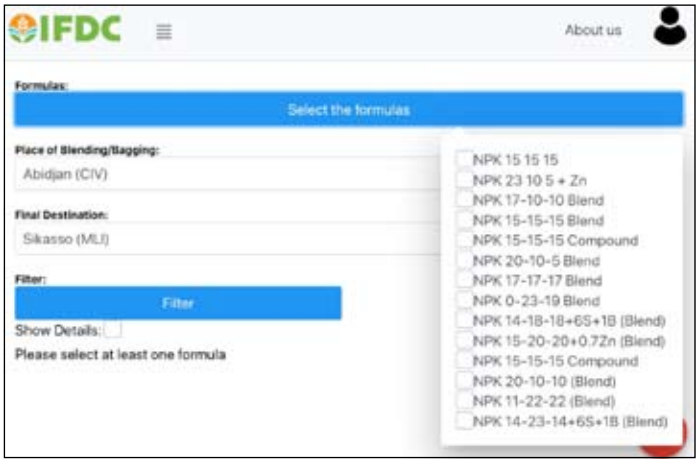
The Simulator allows anyone to estimate and compare costs and prices for any type of fertilizers (urea, DAP, NPK with or without micronutrients, etc) using various logistic routes and (ports, road, rail) from place of production to place of consumption.

Step 1: Create any fertilizer formula you want to import or to blend or to buy. Add secondary, micro-nutrients and fillers as needed.

Step 2: Set your own parameters (e.g. FOB prices, transport and storage costs, exchange rates, etc) or use default data provided online.



Step 3: Select the final destination for your product, and where applicable, the place of blending and/or bagging. Add as many formulas for which you want to estimate costs.



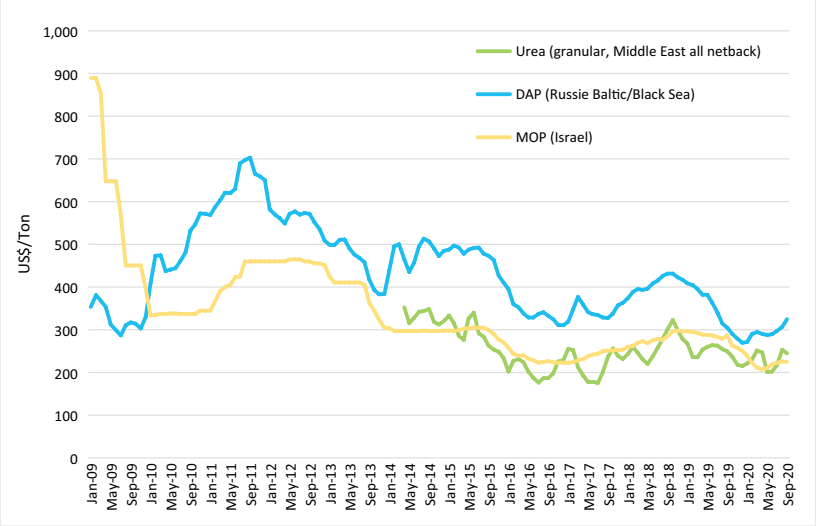
Step 4: Display the various cost components and prices, from FOB to wholesalers' warehouses, in USD and local currency, in tons and 50 kg bags.

Step 5: Use options! Display detailed costs or summarized cost; save, export, print, and share your results; keep your formulas and results for yourself or add them with the community.

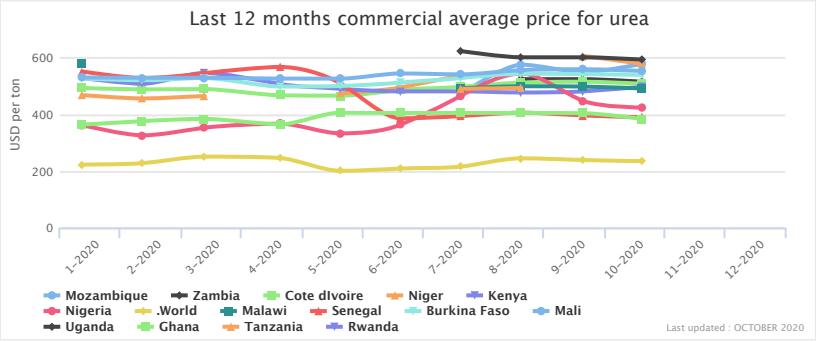
http://fertilizercostsimulator.ifdc.org

FERTILIZER PRICES AND MARKET NEWS

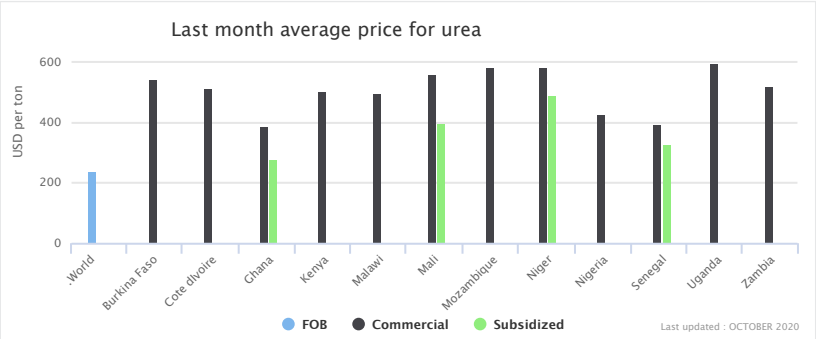
MONITOR INTERNATIONAL PRICES OF FERTILIZERS



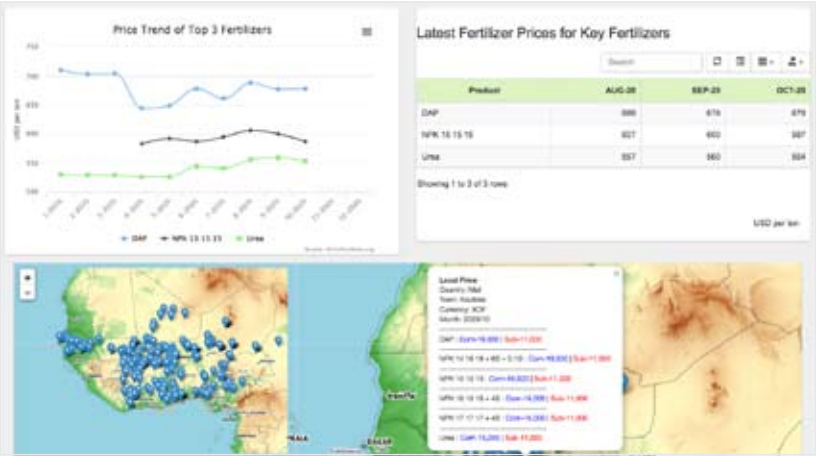
COMPARE WORLD AND RETAIL PRICES



MONITOR COMMERCIAL AND SUBSIDIZED PRICES ACROSS COUNTRIES



MONITOR COMMERCIAL AND SUBSIDIZED PRICES ACROSS COUNTRIES



AfricaFertilizer.org

GET YOUR FREE MONTHLY REVIEW OF INTERNATIONAL AND LOCAL MARKET PRICES

Since 2009, AFO price reporting encourages competition and market transparency, and facilitate analysis for business decisions. All information and data are free to use and to share.

argus

In partnership with Argus Media, AfricaFertilizer.org monitors on a monthly basis international FOB prices and market analysis for 10 of the most used fertilizer grades and ingredients imported in West Africa. This includes urea, SoA, DAP, TSP, and MOP which are used to blend locally crop- and soil-specific NPK formulas.

wafa
West African Fertilizer Association
Association Ouest-Africaine de l'Engrais

In West Africa, AfricaFertilizer.org and WAFA are partnering since 2019 to report every month local retail prices and market conditions from nearly 250 agro dealers shops across 8 countries (Burkina Faso, Côte d'Ivoire, Ghana, Mali, Nigeria, Niger, Togo, Senegal). Commercial and subsidized prices of fertilizers are reported in maps, graphs and tables, in local currency per bag and USD per ton.

AfricaFertilizer.org FERTINEWS

Since 2016, AFO monthly information and analysis are shared to over 3,500 professionals around the globe through FertiNews, available in English and French on most common media support (web, mobile, social media).

INTERNATIONAL – MONTHLY AVERAGE PRICE (FOB, $/TON)

Product	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
Urea (prilled bulk fob Black Sea)	230	216	208	212	216	228	215	202	209	216	245	239
Urea (granular, Middle East-all), fob bulk	237	218	215	221	231	251	246	201	202	217	253	244
Urea (granular bulk fob Nigeria)	258	227	221	232	238	254	237	216	222	237	269	256
Ammonium Sulphate (Black Sea), fob bulk	125	120	105	101	104	110	117	105	102	100	100	106
Ammonia (fob North Africa)	242	235	230	230	227	228	219	196	185	184	185	199
DAP (bulk fob Morocco)	318	301	288	295	307	311	304	300	300	310	321	343
DAP (Baltic/Black Sea), fob bulk	290	279	269	272	291	294	290	288	289	297	307	325
DAP (bulk fob Saudi Arabia) [KSA]	322	313	300	294	299	302	304	306	306	312	326	351
MAP (Morocco), fob bulk	301	286	267	276	306	306	301	295	306	320	329	347
TSP (bulk fob Morocco)	306	285	263	257	255	251	244	240	231	229	236	240
Phosphate rock (69% BPL bulk fob north Africa)	75	73	73	73	73	73	74	78	78	78	78	78
Potash standard MOP (bulk fob Jordan)	260	255	247	240	228	223	223	222	226	225	227	226
Potash Granular MOP bulk fob Baltic/Black Sea	265	264	256	251	240	228	229	232	237	232	228	225
Potash standard SOP (bulk fob northwest Europe [in €]	460	440	438	432	429	425	420	430	440	432	415	414
NPK 15-15-15 (fob Morocco)	249	245	243	243	245	249	246	241	240	238	245	248

NATIONAL – MONTHLY AVERAGE PRICE (COMMERCIAL)

Product	Oct-19	Nov-19	Dec-19	Jan-20	Feb-20	Mar-20	Apr-20	May-20	Jun-20	Jul-20	Aug-20	Sep-20
BURKINA FASO – XOF/50 kg bag												
Urea	15,000	15,583	15,583	15,500	15,500	15,700	15,029	15,111	14,941	15,111	15,077	15,083
NPK 15 15 15	15,167	16,583	16,700	16,708	16,708	16,600	16,107	16,133	16,033	15,893	15,917	16,100
NPK 14 23 14	17,167	17,500	17,500	17,600	17,750	17,750	16,433	16,375	16,467	16,438	16,286	16,281
COTE D'IVOIRE – XOF/50 kg bag												
Urea	14,656	14,656	14,656	14,531	14,531	14,531	14,091	14,091	14,182	14,227	14,200	14,333
NPK 15 15 15	14,750	14,750	14,750	14,500	14,500	14,500	14,500	14,375	14,643	14,571	14,688	14,667
PK 0 23 19 + 6.5 S + 5 MgO + 10 CaO	15,000	15,000	15,000	14,583	14,583	14,583	15,000	14,875	14,625	14,625	14,625	14,875
MALI – XOF/50 kg bag												
Urea	15,833	16,667	16,667	15,643	15,750	15,750	15,846	15,900	15,867	15,500	15,433	15,571
NPK 17 17 17 + 4S	17,000	17,250	17,250	16,857	16,750	16,750	17,825	17,250	17,077	17,000	16,808	16,646
DAP	19,700	22,000	22,000	20,917	20,938	20,938	19,417	19,615	19,769	18,933	19,100	18,857
SENEGAL – XOF/50 kg bag												
Urea	15,306	15,306	15,306	16,233	15,711	16,200	17,088	15,373	12,289	13,547	13,315	13,043
NPK 15 15 15	13,250	13,250	13,250	15,000	14,145	15,000	13,394	13,733	13,255	13,450	13,305	13,055
NPK 10 10 20	16,944	16,944	16,944	17,750	16,900	17,719	19,069	16,498	11,429	13,498	13,355	13,498
GHANA – GHS/50 kg bag												
Urea	100	104	104	104	104	104	105	117	117	117	117	117
NPK 23 10 5	114	115	115	115	115	116	115	119	119	119	119	119
NPK 20 10 10	106	106	106	106	106	106	109	130	130	130	130	130
NIGERIA – NGN/50 kg bag												
Urea	6,611	6,518	6,475	6,529	5,896	6,429	6,963	6,479	7,036	9,007	10,429	8,536
NPK 15 15 15	10,269	10,038	9,423	7,877	10,800	8,369	13,500	10,825	11,300	10,708	11,025	10,838
NPK 20 10 10	6,738	6,546	6,477	6,092	7,223	7,000	5,875	9,250	9,367	9,367	10,067	10,067
NIGER – XOF/50 kg bag												
Urea	13,813	14,000	14,438	13,781	13,594	13,833	–	14,321	14,429	15,375	–	16,875
NPK 15 15 15	13,656	13,938	13,875	13,563	13,346	13,846	–	15,125	15,643	16,643	–	16,250

Source: AfricaFertilizer.org

Photo: Patrice Annequin

5. AGRONOMY IN WEST AFRICA

Photo: Ekwe Dossa

AGRONOMY IN WEST AFRICA

THE FERTILIZER AND SEED RECOMMENDATIONS MAP IN WEST AFRICA (FeSeRWAM): NEW DIGITAL SOLUTIONS TO INCREASE AGRICULTURAL PRODUCTIVITY ACROSS WEST AFRICA

Launched by IFDC and CORAF in September 2020, **FeSeRWAM** is an interactive, online GIS-based platform built to provide access to smart, reliable technical advice and customized agricultural inputs information to farmers. More than **250 agro-input packages** (AIP) are developed for roughly 26 crops and 578 varieties, and over 1,000 fertilizer recommendations across 15 countries in West Africa. The FeSeRWAM development process lasted from October 2018 to July 2020. It was a **collective effort involving more than 350 individuals** from various national and regional organizations and private and public stakeholders, as well as individual consultants and national experts.

All AIP are free to use and to download as PDF booklets or export to CSV or Excel files. They include information on improved seed, appropriate fertilizer blends, and good agricultural practices (GAP) for different crops and agro-ecological zones (AEZ).

AIP QUICK REFERENCE BY COUNTRY

Countries	AIPs	Including these Crops (total of 25 different crops)
Benin	21	Cassava, cotton, maize, millet, oil palm, groundnut, pineapple, rice, sorghum, soybean, yam
Burkina Faso	19	Cotton, cowpea, maize, millet, rice, sesame, sorghum
Chad	6	Cotton, cowpea, maize, millet, groundnut, sorghum
Côte d'Ivoire	18	Cassava, cocoa, coffee, cotton, maize, millet, sorghum
Gambia	7	Cassava, cowpea, maize, millet, groundnut, rice, sorghum
Ghana	12	Cassava, cowpea, maize, millet, groundnut, rice, sorghum, soybean
Guinea	38	Banana, cassava, cocoa, coffee, eggplant, fonio, maize, oil palm, orange, groundnut, pineapple, Irish potato, rice, tomato
Guinea-Bissau	7	Cowpea, maize, groundnut, rice, sorghum
Liberia	8	Cassava, cocoa, coffee, maize, oil palm, groundnut, rice, rubber
Mali	28	Cotton, cowpea, maize, millet, groundnut, rice, sorghum, wheat
Niger	16	Cowpea, maize, millet, groundnut, rice, sorghum
Nigeria	63	Cassava, cocoa, coffee, cotton, cowpea, maize, millet, oil palm, groundnut, Irish potato, rice, sorghum, soybean, yam
Senegal	15	Cotton, cowpea, maize, millet, groundnut, rice, sorghum
Sierra Leone	11	Cassava, cowpea, maize, groundnut, sweet potato, rice
Togo	42	Cashew, cassava, coffee, cotton, cowpea, maize, millet, groundnut, rice, sorghum

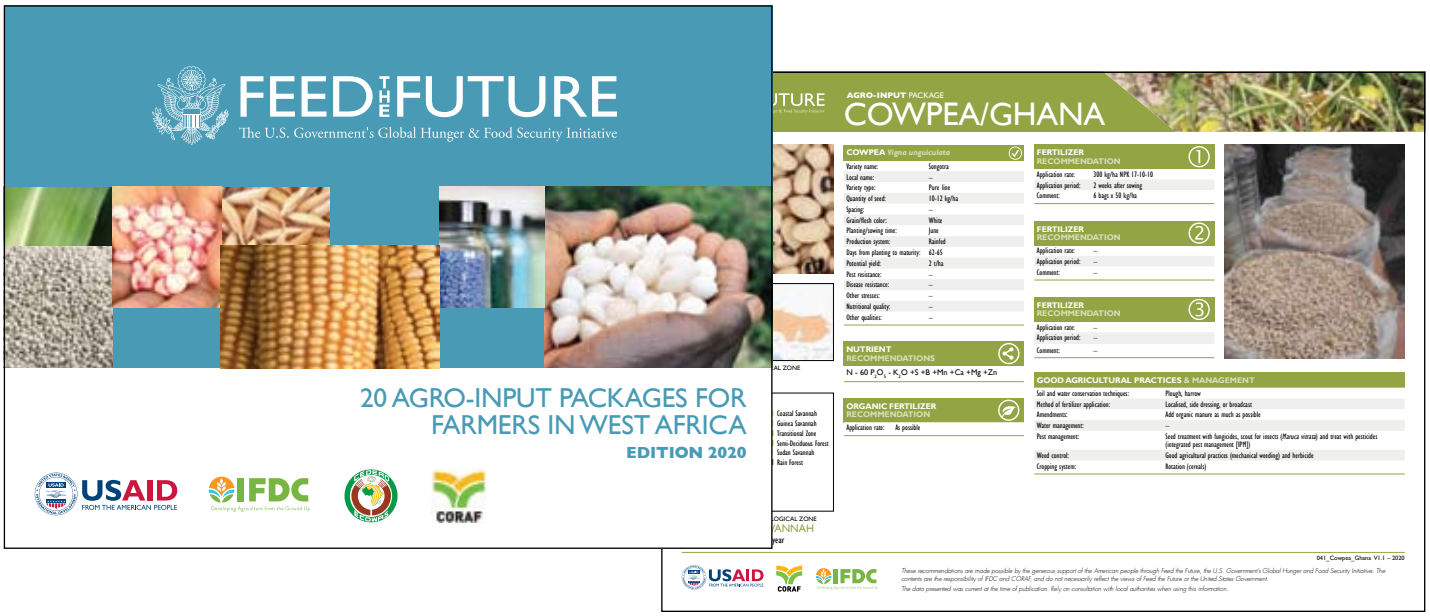
OUR PARTNERS

- **Regional economic communities:** ECOWAS, UEMOA, CILSS
- **Regional organizations and associations:** ROPPA, WAFA, AFSTA, ASIWA, PR-PICA
- **Technial and financial partners** such as international research centers, universities, National Agricultural Research Systems (NARS), Ministries of Agriculture, AGRA, NGOs
- **Private fertilizer and seed sector** producers, importers, and distributors

Figure 1. *The website homepage for feserwam.org.*

Figure 2. *View of one regional agro-ecological zone.*

Figure 3. *AEZ view for an individual country.*



FeSeRWAM SEARCH AND FILTER CONTROLS

SEARCH THE DATA BY THE CRITERIA YOU WANT

LOCATION	• Agro ecological zones (AEZ) • Countries • Towns soil
SOILS	• Texture • Average depth • Organic matter • pH
PLANTS	• Crops • Varieties • Local names • Main charateristics • Resistance to various stresses
FERTILIZERS	• Nutrient recommendations • Fertilizer types and grades • Appllication rates and timing
CROP MANAGEMENT (GAPS)	• Tillage • Water harvest • Crop residue • Organic manure • Mineral and organic amendments

The data presented were current at the time of publication. Local authorities should be consulted when using this information.

AND USE IT YOUR WAY:

Agro dealers and agricultural extension workers	Access and download AIPs for specific locations, as backstopping and training material for local farmers
Fertilizer blenders	Use appropriate raw materials to blend effective, site-specific fertilizers for sale to local farmers
Seed companies and seed producers	Identify appropriate highly-productive seed according to location to grow your business
Agriculture researchers	Adapt and develop packages for specific crops and AEZs based on your own countries
Policy makers and subsidy program administrators	Develop smarter subsidy programs by providing data on existing input packages across the region

WWW.FESERWAM.ORG

IFDC
Developing Agriculture from the Ground Up

CORAF

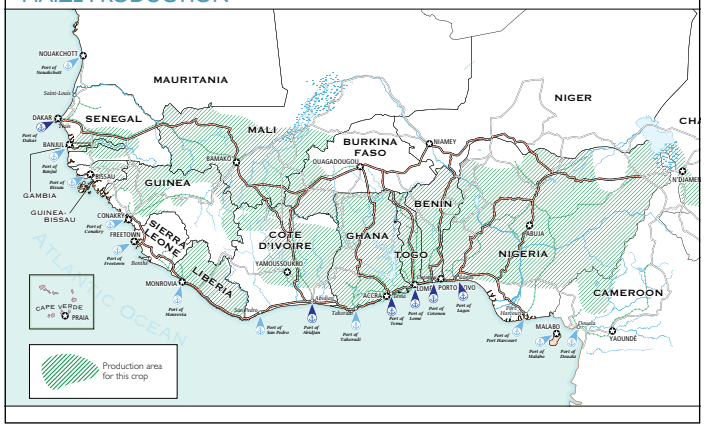
MAIZE

62 AIP

15 COUNTRIES

9 GRADES

MAIZE PRODUCTION



FERTILIZER RECOMMENDATIONS FOR MAIZE

COUNTRY	AEZ	NUTRIENT RECOMMENDATION
BENIN	**SUB-HUMID**	**70 N – 30 P_2O_5 – 30 K_2O**
1 **NPK 15-15-15** 200 kg/ha. Apply at sowing or 15 days after sowing.		
2 **Urea** 100 kg/ha. Apply half at sowing or 15 days after sowing; half just before flowering.		
BURKINA FASO	**SUB-HUMID**	**88 N – 69 P_2O_5 – 45.5 K_2O**
1 **NPK 14-23-14** 300 kg/ha. Apply at land preparation.		
2 **Urea** 100 kg/ha.		
CÔTE D'IVOIRE	**HUMID**	**91.5 N – 22.5 P_2O_5 – 22.5 K_2O**
1 **NPK 15-15-15** 150 kg/ha. Apply at sowing or 2 weeks after sowing.		
2 **Urea** 150 kg/ha. Apply 30-35 days after sowing.		
GAMBIA	**SUB-HUMID**	**70 N – 20 P_2O_5 – 20 K_2O**
1 **NPK 15-15-15** 150 kg/ha.		
2 **Urea** 100 kg/ha.		
GHANA	**HUMID**	**90 N – 60 P_2O_5 – 60 K_2O +0.5 Zn**
1 **NPK 15-20-20 +0.7Zn** 300 kg/ha.		
2 **Urea** 100 kg/ha.		
GUINEA	**HUMID**	**100 N – 40 P_2O_5 – 40 K_2O**
1 **NPK 17-17-17** 300 kg/ha. Apply at land preparation.		
2 **Urea** 200 kg/ha. Apply 3 bags during vegetation stage and 1 bag during climbing stage.		
MALI	**SUB-HUMID**	**83 N – 18 P_2O_5 – 18 K_2O +6S +1B**
1 **NPK 14-18-18 +6S +1B** 100 kg/ha. Apply at emergence.		
2 **Urea** 150 kg/ha. Apply 50 kg at emergence, then 100 kg at ridging.		
NIGERIA	**SEMI-ARID**	**150 N – 60 P_2O_5 – 60 K_2O** (high potential)
1 **NPK 20-10-10** 750 kg/ha.		
2 **N/A**		
SENEGAL	**SEMI-ARID**	**122 N – 30 P_2O_5 – 30 K_2O**
1 **NPK 15-15-15** 200 kg/ha. Apply at sowing or 15 days after sowing.		
2 **Urea** 200 kg/ha. Apply 1.6 bags at 27 days after sowing, 1.6 bags at 41 days after sowing.		
SIERRA LEONE	**HUMID**	**90 N – 30 P_2O_5 – 30 K_2O**
1 **NPK 15-15-15** 200 kg/ha.		
2 **Urea** 130 kg/ha.		
TOGO	**HUMID**	**76 N – 30 P_2O_5 – 30 K_2O**
1 **NPK 15-15-15** 200 kg/ha.		
2 **Urea** 100 kg/ha.		

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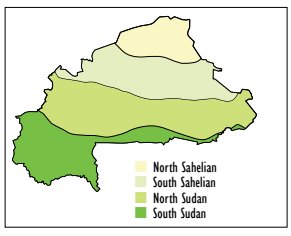
AGRO-INPUT PACKAGE

MAIZE/BURKINA FASO

WEST AFRICA AGRO-ECOLOGICAL ZONE
SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE
SUDANO-SAHELIAN (KAMBOISE, SARIA, OUGADOGOU, KAYA)
Isohyet range 900-1000 mm/year

MAIZE *Zea mays*

Variety name:	Espoir
Local name:	Espoir
Variety type:	OPV
Quantity of seed:	20 kg/ha (when using a mechanical seeder, 12-15 kg manual seeding)
Spacing:	0.80 m x 0.30 m
Grain/flesh color:	Yellow
Planting/sowing time:	15 July–15 August (unimodal)
Production system:	Rainfed (can be produced under irrigation)
Days from planting to maturity:	95-110
Potential yield:	6.5 t/ha
Pest resistance:	Yes
Disease resistance:	Maize streak virus (MSV)
Other stresses:	–
Nutritional quality:	–
Other qualities:	–

NUTRIENT RECOMMENDATIONS

88 N - 69 P_2O_5 - 45.5 K_2O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: When available, add one or more of the following: organic manure, compost, biofortifiers, biostimulants, innoculants; 5 t/ha each year

FERTILIZER RECOMMENDATION 1

Application rate:	300 NPK 14-23-14
Application period:	At sowing (micro-dose)
Comment:	6 bags x 50 kg/ha

FERTILIZER RECOMMENDATION 2

Application rate:	67 kg/ha Urea
Application period:	2/3 at 25 days after sowing (DAS)
Comment:	1.3 bag x 50 kg/ha

FERTILIZER RECOMMENDATION 3

Application rate:	33 kg/ha Urea
Application period:	1/3 at 40 DAS
Comment:	0.6 bag x 50 kg/ha

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough and harrow, +/- ridging across slopes, and in addition: Zaï holes, stone lines, mulching, grass strips, bunding, and minimum/zero tillage are recommended
Method of fertilizer application:	Punch, side placement, and cover
Amendments:	Add organic manure when available
Water management:	Bunding, tie-ridging, drainage
Pest management:	Scout for fall army worm (FAW) and apply integrated pest management (IPM)
Weed control:	Good agricultural practices (mechanical weeding) and herbicide (Glyphosate and Gramazone)
Cropping system:	Rotation (legumes, cotton)

043_Maize_Burkina Faso V1.1 – 2020

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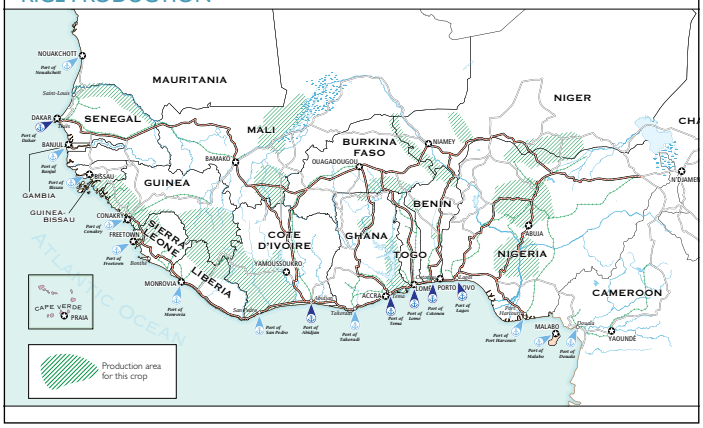
RICE

53 AIP

13 COUNTRIES

9 GRADES

RICE PRODUCTION



FERTILIZER RECOMMENDATIONS FOR RICE

COUNTRY	AEZ	NUTRIENT RECOMMENDATION
BENIN	**SEMI-ARID**	**14 N – 23 P_2O_5 – 13 K_2O**
1 **NPK 15-15-15** 200 kg/ha. Apply at sowing.		
2 **Urea** 75 kg/ha. Apply 50 days after sowing/transplanting.		
BURKINA FASO	**SEMI-ARID**	**120 N – 46 P_2O_5 – 28 K_2O**
1 **NPK 14-23-14** 200 kg/ha. Apply during soil preparation.		
2 **Urea** 200 kg/ha.		
GAMBIA	**SUB-HUMID**	**70 N – 20 P_2O_5 – 20 K_2O**
1 **NPK 15-15-15** 150 kg/ha.		
2 **Urea** 100 kg/ha.		
GHANA	**SEMI-ARID**	**100 N – 40 P_2O_5 – 40 K_2O +1.7 Zn**
1 **NPK 15-20-20+0.7Zn** 200 kg/ha.		
2 **Urea** 130 kg/ha.		
GUINEA	**HUMID**	**100 N – 40 P_2O_5 – 40 K_2O**
1 **NPK 17-17-17** 250 kg/ha. Apply at land preparation.		
2 **Urea** 150 kg/ha. Apply at start of tillering. Covering manure. 1st fraction.		
MALI	**SEMI-ARID**	**80 N – 34 P_2O_5 – 34 K_2O**
1 **NPK 16-26-12+5S+0.3Zn** 200 kg/ha. Apply at tillering (7-15 days after transplanting).		
2 **Urea** 113 kg/ha. Apply in 2 passes: half at tillering and half at panicle initiation.		
NIGER	**SEMI-ARID**	**132 N – 90 P_2O_5 – 60 K_2O**
1 **NPK 15-15-15** 400 kg/ha. Apply 1st at restarting, 2nd at tillering, and 3rd at flowering.		
2 **Urea** 250 kg/ha. Apply at tillering and climbing.		
NIGERIA	**HUMID**	**80 N – 30 P_2O_5 – 30 K_2O**
1 **NPK 20-10-10** 250 kg/ha.		
2 **Urea** 65 kg/ha.		
SENEGAL	**SUB-HUMID**	**91.5 N – 22.5 P_2O_5 – 22.5 K_2O**
1 **NPK 15-15-15** 150 kg/ha. Apply at start up.		
2 **Urea** 150 kg/ha. Apply in 2 passes: half at tillering and half at panicle initiation.		
SIERRA LEONE	**HUMID**	**60 N – 40 P_2O_5 – 40 K_2O**
1 **NPK 15-15-15** 200 kg/ha. Basal broadcast P; topdress N+K 4-6 weeks after seeding.		
2 **Urea** 100 kg/ha.		
TOGO	**HUMID**	**46 N – 23 P_2O_5 – 23 K_2O**
1 **NPK 15-15-15** 150 kg/ha. Application time depends on installation mode.		
2 **Urea** 50 kg/ha.		

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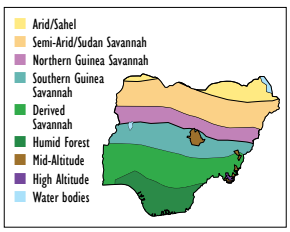
AGRO-INPUT PACKAGE

RICE/NIGERIA

WEST AFRICA AGRO-ECOLOGICAL ZONE

HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

FOREST TRANSITION/DERIVED SAVANNAH

Isohyet range >800 mm/year

RICE *Oryza sativa*

Variety name:	FARO 52 (synonym WITA 4)
Local name:	–
Variety type:	Hybrid
Quantity of seed:	20 kg transplanting; 40 kg direct seeding
Spacing:	Transplant 1-2 seedlings 20 cm x 20 cm or transplant/plant 20 cm x 20 cm for upland; 21-28 days-old seedling or grain 4-6 seeds per hill
Grain/flesh color:	White
Planting/sowing time:	25 April–30 June
Production system:	Rainfed lowland
Days from planting to maturity:	125-130
Potential yield:	7 t/ha
Pest resistance:	–
Disease resistance:	–
Other stresses:	Lodging, Fe toxicity, and drought
Nutritional quality:	–
Other qualities:	–

NUTRIENT RECOMMENDATIONS

100 N - 50 P_2O_5 - 40 K_2O +S +B +Mn +Ca +Mg +Zn

ORGANIC FERTILIZER RECOMMENDATION

Application rate: When possible

FERTILIZER RECOMMENDATION ①

Application rate:	250 kg/ha NPK 20-10-10
Application period:	At planting or 2-3 weeks after planting (WAP)
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	250 kg/ha NPK 20-10-10
Application period:	Side dress 4-6 WAP
Comment:	5 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	109 kg/ha Urea
Application period:	At planting or 2-3 WAP and side dress the same quantity 5-6 WAP
Comment:	–

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Plough, harrow, puddling and leveling
Method of fertilizer application:	Punch and side placement (direct seeding), broadcasting, urea deep placement (UDP)
Amendments:	Add organic manure when necessary
Water management:	Basin, alternate wetting and drying, drainage
Pest management:	Scout for insects and apply pesticide (integrated pest management [IPM])
Weed control:	Good agricultural practices (mechanical weeding) and herbicide
Cropping system:	Rotation (sweet potato, potato, vegetables)

055_Rice_Nigeria V1.1 – 2020

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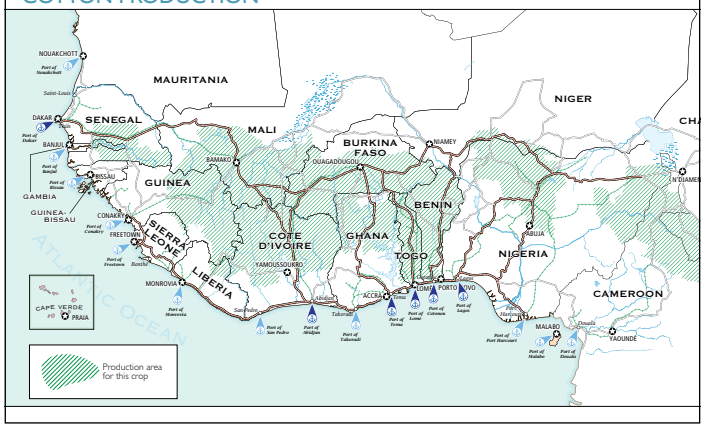
21 AIP

8 COUNTRIES

13 GRADES

COTTON PRODUCTION



FERTILIZER RECOMMENDATIONS FOR COTTON

COUNTRY	AEZ	NUTRIENT RECOMMENDATION
BENIN	**SEMI-ARID**	**51 N – 36 P_2O_5 – 36 K_2O +12S +3B**
1 **NPK 14-23-14 +5S +1B** 150 kg/ha. Apply 15 days after at sowing.		
2 **Urea** 50 kg/ha. Apply 40 days after sowing.		
BURKINA FASO	**SEMI-ARID**	**44 N – 34.5 P_2O_5 – 21 K_2O +9S +1.5B**
1 **NPK 14-23-14 +6S +1B** 150 kg/ha.		
2 **Urea** 50 kg/ha. Apply 40 days after sprouting.		
CHAD	**SEMI-ARID**	**50 N – 20 P_2O_5 – 20 K_2O**
1 **NPK 19-12-19 +5S +1.2B** 150 kg/ha. Apply 15-20 days after sowing.		
2 **Urea** 50 kg/ha. Apply 45-50 days after emergence.		
CÔTE D'IVOIRE	**SUB-HUMID**	**53 N – 30 P_2O_5 – 30 K_2O +12S +3B**
1 **NPK 15-15-15 +6S +1B** 200 kg/ha. Apply 15-20 days after sowing.		
2 **Urea** 50 kg/ha. Apply 40 days after sowing.		
MALI	**SEMI-ARID**	**51 N – 36 P_2O_5 – 36 K_2O +12S +3B**
1 **NPK 14-18-18 +6S +1B** 200 kg/ha. Apply 15-20 days after sowing.		
2 **Urea** 50 kg/ha. Apply 41 days after planting.		
MALI	**SEMI-ARID**	**76 N – 30 P_2O_5 – 30 K_2O +10S +2B +5Ca +5Mg +0Zn**
1 **NPK 15-15-15 +5S +1B +2.5CaO +2.5MgO** 200 kg/ha. 15-20 days after sowing.		
2 **Urea** 100 kg/ha. Apply 30-40 days after sowing.		
NIGERIA	**SEMI-ARID**	**60 N – 25 P_2O_5 – 20 K_2O +0.75Bo**
1 **Urea** 130 kg/ha.		
2 **SSP (boronated)** 140 kg/ha. Apply 3 weeks after planting.		
NIGERIA	**SUB-HUMID**	**60 N – 25 P_2O_5 – 20 K_2O +0.75Bo**
1 **NPK 20-10-10** 150 kg/ha.		
2 **Urea** 65 kg/ha. Apply 8 weeks after planting.		
SENEGAL	**SEMI-ARID**	**51 N – 46 P_2O_5 – 28 K_2O +10S +2B**
1 **NPK 14-23-14 +5S +1B** 150-200 kg/ha. Apply 15-20 days after sowing.		
2 **Urea** 50 kg/ha. Apply 40 days after sowing.		
TOGO	**HUMID**	**44 N – 26 P_2O_5 – 22 K_2O**
1 **NPK 22-13-11 +5S +0.75B +4MgO** 200 kg/ha.		
2 **N/A**		
TOGO	**SEMI-ARID**	**41 N – 30 P_2O_5 – 27 K_2O**
1 **NPK 12-20-18 +5S +1B** 150 kg/ha.		
2 **Urea** 50 kg/ha. Apply 40 days after sowing.		

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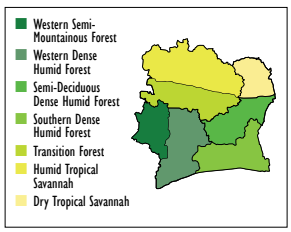
AGRO-INPUT PACKAGE

COTTON/COTE D'IVOIRE

WEST AFRICA AGRO-ECOLOGICAL ZONE

SUB-HUMID



COUNTRY-SPECIFIC AGRO-ECOLOGICAL ZONE

DRY TROPICAL SAVANNAH (BOUNA, BONDOUKOU, BASSIAN, TANDA)

Isohyet range 800-1000 mm/year (monomodal)

COTTON *Gossypium hirsutum*

Variety name:	W766 C
Local name:	–
Variety type:	OPV
Quantity of seed:	20 kg/ha (delinted) et 50 kg/ha (with fiber)
Spacing:	–
Grain/flesh color:	Brown (delinted) and gray (with fiber)
Planting/sowing time:	20 Mai–20 July
Production system:	Rainfed
Days from planting to maturity:	100-120 (early to late sowing)
Potential yield:	Cottonseed (2.5-3 t/ha) and fiber yield (44%)
Pest resistance:	6 insecticide treatments necessary
Disease resistance:	Seed fungicide treatments
Other stresses:	Drought and flood
Nutritional quality:	Seed rich in oil (18-24% oil)
Other qualities:	Animal feed (oilcake), fiber quality (length, micron, strength, et grade)

NUTRIENT RECOMMENDATIONS

53 N - 360 P_2O_5 - 30 K_2O +12 S +3 B

(plan for K in seed production)

ORGANIC FERTILIZER RECOMMENDATION

Application rate: 5-6 t/ha – manure or compost (every 2-3 years)

FERTILIZER RECOMMENDATION ①

Application rate:	200 kg/ha (NPKSB 15-15-15+6S+1B)
Application period:	15-20 days after sowing (DAS)
Comment:	4 bags x 50 kg/ha

FERTILIZER RECOMMENDATION ②

Application rate:	50 kg/ha (Urea 46%)
Application period:	40 DAS
Comment:	1 bag x 50 kg/ha

FERTILIZER RECOMMENDATION ③

Application rate:	50 kg/ha (KCl 60%)
Application period:	15-20 DAS
Comment:	1 bag x 50 kg/ha (seed production) mixed with NPK

GOOD AGRICULTURAL PRACTICES & MANAGEMENT

Soil and water conservation techniques:	Mulching, grass cover, minimum/zero tillage, and ridging (depending on the type and uses of the land, and rainfall patterns)
Method of fertilizer application:	Side dressing or in hill – NPK (side dressing) and urea incorporated into the soil (of hill)
Amendments:	Manure, compost, harvest residues (according to availability and affordability)
Water management:	No – cotton doesn't like excess water
Pest management:	At least 8 insecticide treatments; for early sowing increase the number of treatments
Weed control:	Weeding and herbicide treatments (total, pre- and post-emergence); weeding and treatment as needed
Cropping system:	Cotton/cereals rotations, crop/livestock integration (an unavoidable necessity in cotton production) including recycling harvest residues and livestock pens

058_Cotton_Côte d'Ivoire V1.1 – 2020

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The data presented was current at the time of publication. Rely on consultation with local authorities when using this information.

6. QUALITY CONTROL REGULATORY SYSTEMS AND SUBSIDY POLICIES

Photo: Emmanuel Alognikou

QUALITY CONTROL REGULATORY SYSTEMS AND SUBSIDY POLICIES

With technical support from IFDC, the ECOWAS and UEMOA Commissions embarked, starting in 2010, on the development of a regional legal framework that harmonizes national regulations governing fertilizer trade and quality control. This resulted in the adoption of the **Regulation C/REG.13/12/12 relating to fertilizer quality control** in the ECOWAS region in December 2012 for effective implementation and enforcement by all national governments, and adoption in 2016 of 4 implementing regulations.

The status of implementation to date, illustrated in the matrix below, stands as:

- 14 countries have published the main ECOWAS regulation in their national gazettes
- 10 national advisory (technical) committees/councils in charge of advising the Ministers of Agriculture on policies and regulations for development of fertilizer manufacture, inspection, sampling, analysis, and marketing have been established/reinforced.

This 2020 Edition of the WAFBIG also provides the first register of 23 soil and fertilizer testing laboratories in operation in selected West African countries, including those designated by the Ministries of Agriculture for fertilizer analysis to support national regulatory frameworks.

The Ghanaian Minister for Agriculture, Hon. Owusu Afriyie Akoto, unveiling new labeling requirements for 2019 PFJ fertilizer bags, compliant with ECOWAS regulations.

STATUS OF IMPLEMENTATION OF REGULATION C/REG.13/12/12

Relating to fertilizer quality control in the ECOWAS region by country – as of December 31, 2020

Measures to be taken by ECOWAS/UEMOA/CILSS Member States	Benin	Burkina Faso	Cape Verde	Chad	Côte d'Ivoire	Ghana	Guinea	Guinea Bissau	Liberia	Mali	Mauritania	Niger	Nigeria	Senegal	Sierra Leone	The Gambia	Togo	%
Publication in MS' Official Gazette	Y_5	Y_5	Y_5	Y_5	Y_5	Y_5	Y_5	N	Y_5	Y_5	N	Y_5	N	Y_5	Y_5	Y_5	Y_5	82
Development/Review and Adoption of national fertilizer supporting regulations aligned to harmonized ECOWAS Regulation for:																		
A. Establishing National fertilizer regulatory body	Y_5	Y_5	N	Y_1	Y_5	Y_5	Y_5	N	Y_4	Y_5	N	Y_5	Y_5	Y_3	Y_5	Y_2	Y_5	71
B. Designating a fertilizer testing laboratory	Y_5	Y_5	N	Y_5	Y_5	Y_5	Y_5	N	Y_1	Y_5	N	Y_5	Y_5	Y_5	Y_1	Y_1	Y_5	68
C. Establishing a National Fertilizer Committee	Y_5	Y_5	N	Y_4	Y_2	Y_5	Y_3	N	Y_4	Y_5	N	Y_5	Y_3	Y_3	Y_5	Y_2	Y_5	66
D. Determining conditions and modalities for licensing of fertilizer businesses	Y_5	Y_5	N	Y_1	Y_2	Y_5	Y_3	N	Y_3	Y_5	N	Y_4	Y_4	Y_3	Y_4	Y_2	Y_5	60
E. Appointing fertilizer inspectors and other competent authorities	Y_4	Y_3	N	N	Y_1	Y_5	Y_5	N	Y_1	Y_5	N	Y_1	Y_5	N	Y_1	Y_1	Y_3	42
F. Fixing fee amounts for acquiring & renewing a license, for fertilizer inspection & analysis	Y_3	Y_5	N	Y_1	Y_2	Y_5	Y_3	N	Y_1	Y_5	N	Y_5	Y_3	Y_3	Y_1	Y_1	Y_5	51
G. Levying penalties for violation of provisions	Y_5	Y_4	Y_4	N	Y_2	Y_5	Y_3	Y_4	Y_1	Y_5	N	Y_4	Y_4	Y_3	Y_4	Y_1	Y_3	61
Development/Adaptation of administrative forms/procedures manuals for:																		
• Registration of fertilizer businesses	Y_5	Y_5	N	N	Y_5	Y_5	Y_5	N	Y_1	Y_5	N	Y_5	Y_3	N	Y_1	Y_1	Y_5	54
• Inspection of fertilizer products and bag weight	Y_3	Y_5	N	N	N	Y_5	Y_5	N	Y_3	Y_5	N	Y_3	Y_5	Y_3	Y_1	Y_1	Y_5	52
• Fertilizer analytical reporting	Y_3	Y_5	N	N	Y_5	Y_5	Y_5	N	Y_3	Y_5	N	Y_5	Y_5	Y_5	Y_1	Y_1	Y_5	62
Strengthening of capacities on:																		
• Human resources[1]	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	Y	100
• Capital resources[2]	Y	Y	N	N	N	Y	Y	N	N	Y	N	Y	Y	Y	Y	N	Y	59
• Financial resources[3]	Y	Y	Y	N	Y	Y	Y	N	Y	Y	N	Y	Y	Y	Y	Y	Y	82
Overall Progress by Country (%)	88	87	19	31	62	92	86	9	50	100	2	86	78	64	55	34	93	

N: *No actions or measures have been taken by the competent authorities at national level.*

Yn: *Yes, provisions or actions have been taken by national authorities to align national fertilizer legislations (law and supporting regulations) to ECOWAS Regulations, and at Stage 'n' in the process of adoption: (1) analyzed, (2) drafted and presented for public/stakeholder consultation, (3) presented for legislation, (4) passed/approved, and (5) passed for which implementation has begun.*

[1] *Received at least one training on fertilizer quality control techniques.*

[2] *Infrastructure and equipment investments.*

[3] *General national budget, donors' funds, revenues generated from government oversight (registration and inspection fees), etc.*

Economic Community of West African States

OVERVIEW OF ECOWAS LEGAL FRAMEWORK

FOR FERTILIZER TRADE AND QUALITY CONTROL IN WEST AFRICA

The West Africa legal framework for fertilizer trade and quality control comprises of a set of five instruments:

1. Regulation C/REG.13/12/12 relating to fertilizer quality control in the ECOWAS Region.
2. Implementing Regulation ECW/PEC/IR/02/03/16 relating to the labeling and tolerance limits of fertilizers traded in the ECOWAS Region.
3. Implementing Regulation ECW/PEC/IR/05/12/16 relating to the roles, organization and functioning of the West African Committee for Fertilizer Control.
4. Implementing Regulation ECW/PEC/IR/06/12/16 relating to fertilizer analysis manual in the ECOWAS Region.
5. Implementing Regulation ECW/PEC/IR/07/12/16 relating to fertilizer inspection manual in the ECOWAS Region.

The purpose of this legal framework is to:

- Safeguard the interests of the farmers against nutrient deficiencies, adulteration, misleading claims, and short weight bag.
- Safeguard the interests of fertilizer enterprises and contribute to the creation of an enabling environment for private investment in the fertilizer industry.
- Protect the West Africa natural environment and its population against the potential dangers associated with inappropriate fertilizer use.
- Facilitate inter- and intra-States trade in fertilizers, through the implementation of principles and rules mutually agreed at the regional level to dismantle trade barriers.

In terms of scope, the Regional Fertilizer Regulation applies to all fertilizer-related activities, especially those pertaining to the licensing of agro-dealers, as well as the storage and sale of fertilizers locally manufactured or imported into the Member States.

The Regional Fertilizer Regulation establishes an implementation body denominated the West African Committee for Fertilizer Control (WACoFeC) with the mandate to facilitate, on behalf of the ECOWAS Commission, the implementation of the Regional Fertilizer Regulation by Member States, working closely with national bodies in charge of fertilizer control. Its organization and functioning are spelled out in a specific Implementing Regulation (listed above as No. 3) and its operational budget is provided for by the ECOWAS Commission.

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The Regional Fertilizer Regulation also establishes two implementation instruments (manuals) detailing the modalities and procedures for fertilizer inspection and analysis in the Member States. However, it attributes the responsibility for quality control to each Member State through qualified inspectors and designated laboratories.

Other key provisions of the Regional Fertilizer Regulation include:

- Minimum labeling requirements.
- Maximum tolerance limits for nutrient content deficiencies and bag weight shortages.
- Maximum allowable limits of heavy metals in fertilizer products.
- Mandatory licensing for agro-dealers (issued by each country under conditions and modalities they each determine, valid for 3 years renewable) – The conditions for operating as a manufacturer or an importer of fertilizer in each of the Member States shall be governed by the regulations in force in the Member State concerned.
- Specification for fertilizer warehouse and storage conditions.
- Requirement for prior notification for importation of fertilizers.
- Right to appeal for manufacturers, importers and distributors.
- Sanctions defined by each Member State for violations stated in the Regulation.

At the core of the West Africa legal framework for fertilizer control is the principle of "truth in labeling" which holds that whatever a seller claims he/she is selling, he/she must guarantee it. It is therefore essential that label claims on fertilizer packaging be truthful. Consequently, some specific requirements are set to define what one can claim and it is not necessary to register fertilizer products.

Legal implications: As stated in the ECOWAS Revised Treaty, the Regional Fertilizer Regulation has a general application (i.e., applies to all); it is binding on all and in all its elements, and is directly, immediately and simultaneously applicable in all countries. In other words, once adopted, it is an integral part of national legislations and no ratification or domestication is needed at the national level. However, each Member State shall adopt complementary supporting regulations prescribed by the Regulation and may adopt other regulations in areas not legislated at the regional level.

For further information about the ECOWAS Fertilizer Regulation, please contact:

Mr. Alain Sy TRAORE
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Economic Community of West African States

ECOWAS TOLERANCE LIMITS

FOR PLANT NUTRIENTS, HEAVY METALS AND BAG WEIGHT

(Ref. Implementing Regulation ECW/PEC/IR/02/03/16)

Tolerance means the permitted deviation of measured values of a nutrient content or bag weight below the values claimed on the label, or the maximum allowable heavy metal limits in a fertilizer. The tolerance limits for nutrient contents, heavy metals and bag weight are as follows:

ALLOWABLE VARIATIONS IN PLANT NUTRIENT CONTENTS

1. The maximum acceptable deviation of the measured values of primary nutrient contents below the values claimed on the label shall be the value as follows:

TYPE OF FERTILIZER	TOLERANCE
Single nutrient fertilizers:	
• With up to 20% nutrient content	Maximum 0.3 units
• With more than 20% nutrient content	Maximum 0.5 units
Complex fertilizers and NPK **blends**	Maximum 1.1 units for individual nutrients and maximum 2.5% for all nutrients combined

The total deviation for all nutrients combined is calculated from the addition of deviations for nutrients with contents lower than the label specification; compensation from nutrients with content higher than specified to balance deficiency of another nutrient is not allowed.

2. The maximum acceptable deviation of the measured value of a **secondary or micro nutrient content** below the values claimed on the label shall be as follows:

NUTRIENTS		TOLERANCE
SECONDARY NUTRIENTS	Calcium (Ca) Sulfur (S) Magnesium (Mg)	0.2 unit +5% of guarantee
MICRONUTRIENTS	Boron (B)	0.003 unit +15% of guarantee
	Cobalt (Co) Molybdenum (Mo)	0.0001 unit +30% of guarantee
	Chlorine (Cl) Copper (Cu) Iron (Fe) Manganese (Mn) Sodium (Na) Zinc (Zn)	0.005 unit +10% of guarantee

The maximum allowable variation when calculated in accordance with the above shall be 1 unit (1%).

MAXIMUM ALLOWABLE HEAVY METAL LIMITS

1. The maximum allowable heavy metal limits in fertilizer products shall be determined based on the following:

HEAVY METAL	MULTIPLIER		TOLERANCE
	ppm per 1% P_2O_5	*ppm per 1% micronutrients*	*milligrams per kilogram of biosolids or compost products – dry weight basis*
Arsenic (As)	13	112	75
Cadmium (Cd)	10	83	85
Cobalt (Co)	136	2,228*	–
Copper (Cu)	–	–	4,300
Lead (Pb)	61	463	840
Mercury (Hg)	1	6	57
Molybdenum (Mo)	42	300*	75
Nickel (Ni)	250	1,900	420
Selenium (Se)	26	180	100
Zinc (Zn)	420	2,900*	7,500

** Should be used only when the percentage of that particular micronutrient is not specified or guaranteed in the fertilizer label.*

2. For a fertilizer product with P_2O_5 guarantee and no micronutrient guarantee:

   For each heavy metal, its maximum allowable concentration (ppm) in that product shall be determined by multiplying the percent guaranteed P_2O_5 of the product by the appropriate factor of that heavy metal in column 2 in the above table (paragraph 1).

   However, if the percent guaranteed P_2O_5 of the product is less than 6.0, then the multiplier to be utilized shall be 6.0.

3. For a fertilizer product with micronutrients guarantee and no P_2O_5 guarantee:

   For each heavy metal, its maximum allowable concentration (ppm) in that product shall be determined by multiplying the sum of the guaranteed percentages of all micronutrients in the product by the appropriate factor of that heavy metal in column 3 in the above table presented in paragraph 1.

   However, if the sum of the guaranteed percentages of all micronutrients in the product is less than 1.0 then the multiplier to be utilized shall be 1.0.

4. For a fertilizer product with both micronutrients and P_2O_5 guarantee:

   For each heavy metal, carry out separately the computation outlined in above paragraphs 2) and 3) and the maximum allowable concentration (ppm) of the heavy metal under consideration shall be the higher of the two resulting values.

5. For a biosolid or compost product, its maximum allowable concentration of each heavy metal shall be the appropriate value of that heavy metal in column 4 of the above table presented in paragraph 1.

MAXIMUM ALLOWABLE VARIATION FOR BAG WEIGHT

The maximum acceptable variation of measured bag weight below the value claimed on the label shall be 500 g per 50 kg bag (1%).

MINIMUM PERCENTAGES OF NUTRIENT CONTENTS CLAIMABLE

1. For Nitrogen (N), Phosphorus (P_2O_5) or Potassium (K_2O), the minimum percentage of nutrient contents that may be guaranteed shall be 1.0.

2. The minimum percentages of nutrient contents, other than nitrogen, phosphorus and potassium that may be guaranteed shall be as follows:

ORDER OF DECLARATION	NUTRIENT	MINIMUM PERCENT CLAIMABLE
1	Calcium (Ca)	1.0000
2	Sulfur (S)	1.0000
3	Magnesium (Mg)	0.5000
4	Boron (B)	0.0200
5	Chlorine (Cl)	0.1000
6	Cobalt (Co)	0.0005
7	Copper (Cu)	0.0500
8	Iron (Fe)	0.1000
9	Manganese (Mn)	0.0500
10	Molybdenum (Mo)	0.0005
11	Sodium (Na)	0.1000
12	Zinc (Zn)	0.0500

3. Any of the secondary nutrients and micronutrients listed in paragraph 2 above that are guaranteed shall appear in the order listed and shall immediately follow guarantees for the primary nutrients of nitrogen, phosphorus and potassium if present.

For further information about the ECOWAS Fertilizer Regulation, please contact:

Mr. Alain Sy TRAORE – Director, Agriculture & Rural Development
ECOWAS Commission – Email: satraore@ecowas.int

ECOWAS FERTILIZER LABELING

Economic Community
of West African States

(Ref. Implementing Regulation ECW/PEC/IR/02/03/16)

The label illustrated here is not a standard. It's a model that simply shows the minimum information required on fertilizer labels, as prescribed by an ECOWAS Implementing Regulation on labeling.

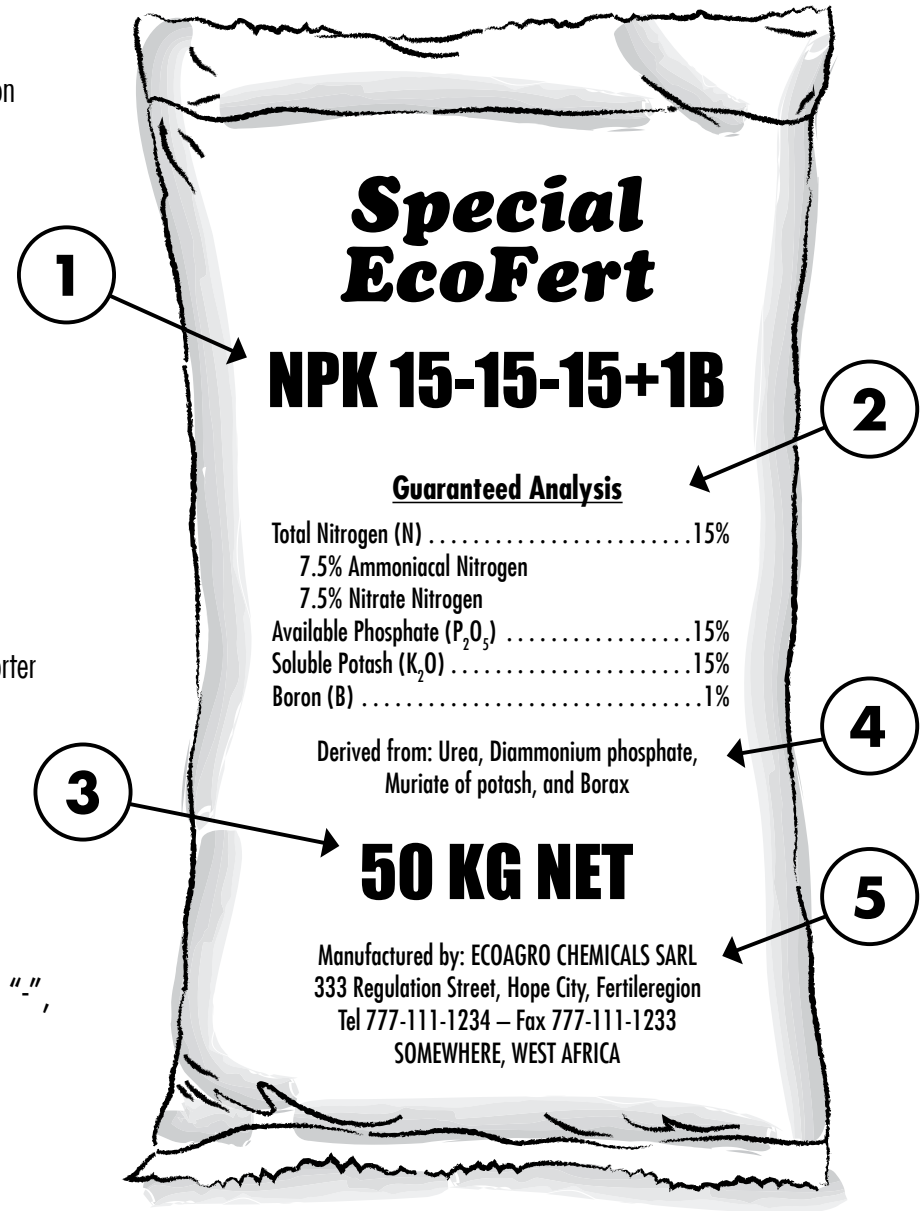
THE BIG FIVE

Five required components must appear on a fertilizer label:

1. Grade
2. Guaranteed analysis
3. Net weight
4. Sources of nutrients
5. Name and address of the manufacturer, importer or re-packing agent

GRADE

Grade is a shorthand representation of the guarantees for Total Nitrogen (N), Available Phosphate (P_2O_5) and Soluble Potash (K_2O) with each guarantee separated by a hyphen, "-", e.g., 15-15-15. The grade shall be in whole numbers and in the same terms, order, and percentages as in the guaranteed analysis.



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GUARANTEED ANALYSIS

The **Guaranteed Analysis** states the minimum percentage of all plant nutrients claimed on the label in a specific order and format. The format is as follows:

Guaranteed analysis

Total Nitrogen (N) ..... ____%,
____% Ammoniacal Nitrogen
____% Nitrate Nitrogen
____% Water-insoluble Nitrogen
____% Urea Nitrogen
____% Other recognized and determinable forms of N
Available Phosphate (P_2O_5) ..... ____%
Soluble Potash (K_2O) ..... ____%
Calcium (Ca) ..... ____%
Sulfur (S) ..... ____%
Magnesium (Mg) ..... ____%
Boron (B) ..... ____%
Chlorine (Cl) ..... ____%
Cobalt (Co) ..... ____%
Copper (Cu) ..... ____%
Iron (Fe) ..... ____%
Manganese (Mn) ..... ____%
Molybdenum (Mo) ..... ____%
Sodium (Na) ..... ____%
Zinc (Zn) ..... ____%

Guarantees or claims for the above listed plant nutrients are the only ones which will be accepted in West Africa and they must be in the order listed except when a nutrient is broken down into chemical forms, such as for N, then the breakdown forms may be in any order. If a nutrient is claimed, then it shall be listed in the Guaranteed Analysis. Zero guarantees are not allowed except in the chemical form breakdown where they may be used if needed for clarity.

NET WEIGHT

All fertilizers (bag, bulk or liquid) must be sold with specification of the net weight, which may be expressed in metric units.

SOURCES OF NUTRIENTS

Sources of nutrients, when shown on the label, shall be listed below the completed Guaranteed Analysis statement.

NAME AND ADDRESS OF MANUFACTURER OR RE-PACKING AGENT

The name and address of the registered/licensed manufacturer or re-packing agent responsible for the guarantees on the label shall be listed on the label.

ADDITIONAL NOTES

1. For packaged products, this label shall either (a) appear on the front or back of the package and occupy at least one-third of a side of the package, or (b) be printed on a tag with minimum dimensions of 8 cm by 12 cm and attached to the package. For bulk products, this same label in written or printed form shall accompany delivery and be supplied to the purchaser at time of delivery, and be accessible for inspection purposes.
2. The component order is not fixed as long as all are present in a readable and conspicuous place on the label.
3. There may be additional labeling requirements; therefore, it is always advisable to consult with the appropriate national body for fertilizer control in your country for review of a draft label prior to printing.
4. The minimum percentages of primary nutrients (N, P_2O_5, K_2O) claimable shall be 1.0. The minimum percentages of secondary and micro nutrients claimable are specified in an Implementing Regulation on fertilizer labeling.

Label means (1) any legend, word, mark, symbol, or design applied or attached to, included in, belonging to, or accompanying any fertilizer, supplement, or container; or (2) any advertisements, brochures, posters, television, radio, or internet announcements used in promoting the sale of fertilizer.

For further information about the ECOWAS Fertilizer Regulation, please contact:

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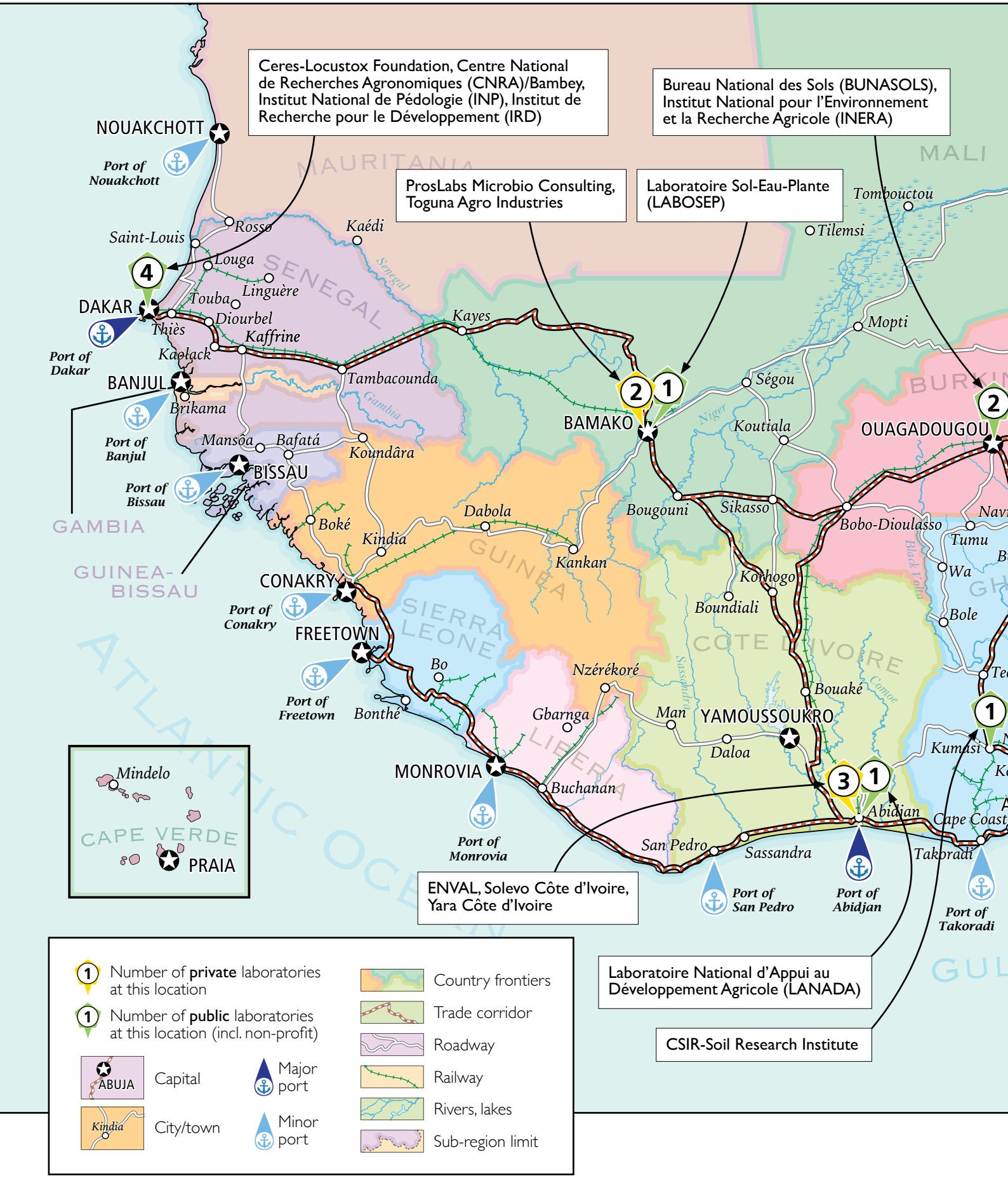
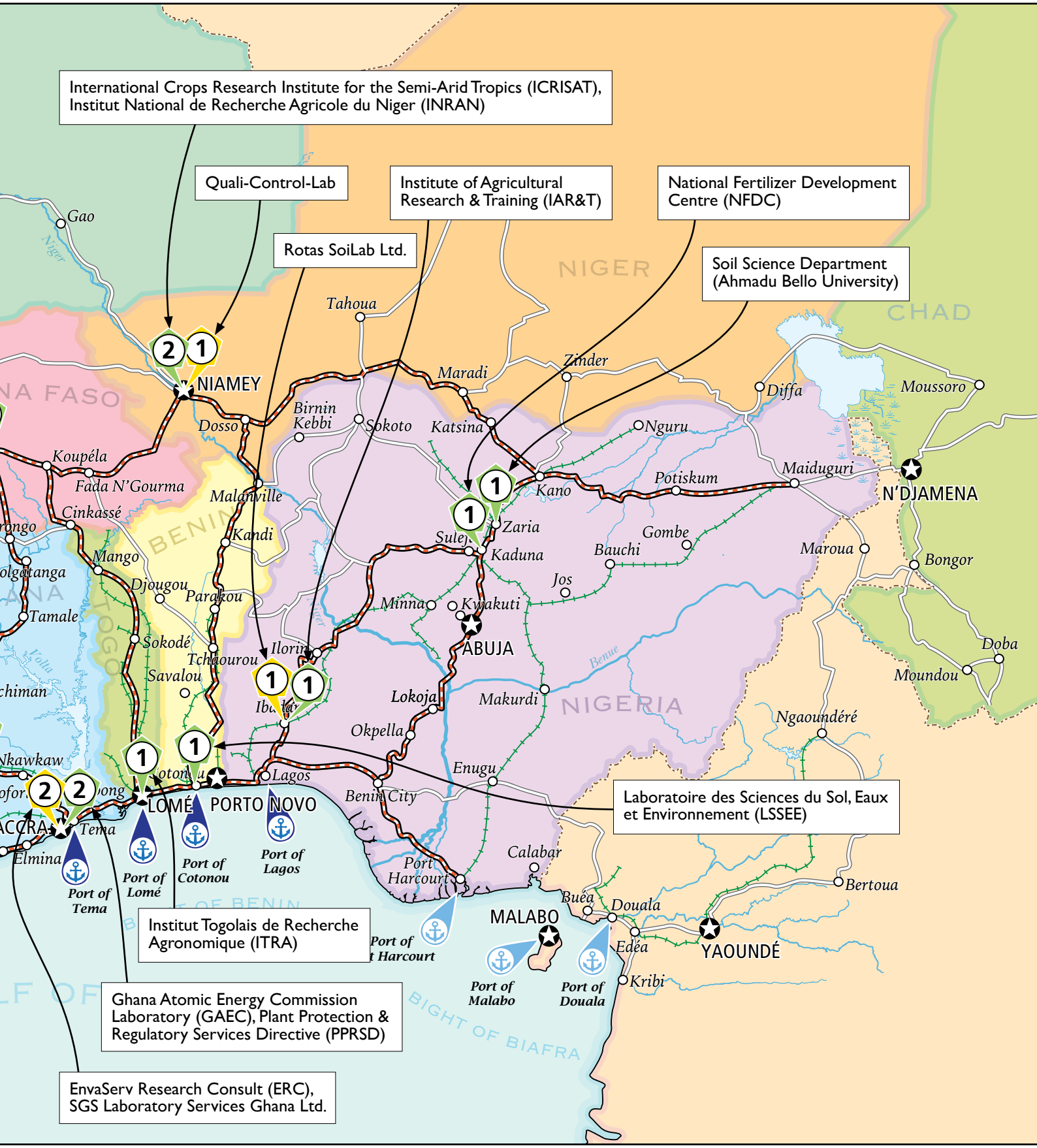
Director, Agriculture & Rural Development
ECOWAS Commission
Email: satraore@ecowas.int

YOUR CLAIM IS A WARRANTY!

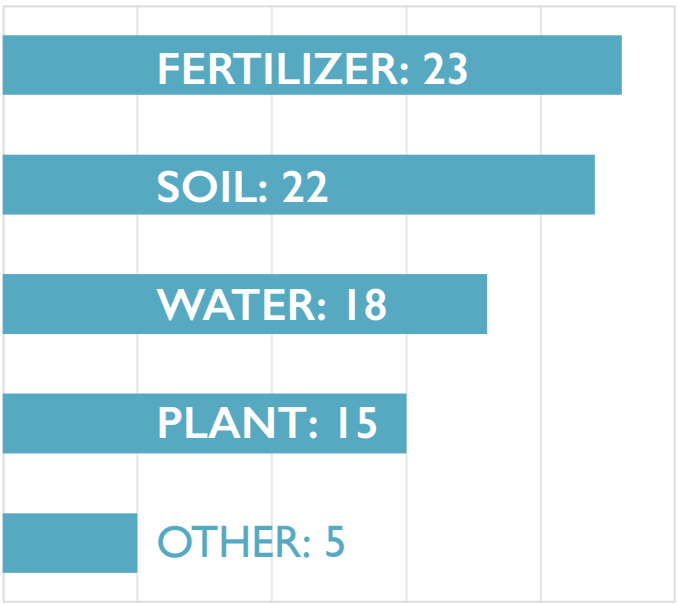
SOIL TESTING AND FERTILIZER QUALITY CONTROL LABS




International Crops Research Institute for the Semi-Arid Tropics (ICRISAT), Institut National de Recherche Agricole du Niger (INRAN)
Quali-Control-Lab
Institute of Agricultural Research & Training (IAR&T)
National Fertilizer Development Centre (NFDC)
Rotas SoiLab Ltd.
Soil Science Department (Ahmadu Bello University)
Laboratoire des Sciences du Sol, Eaux et Environnement (LSSEE)
Institut Togolais de Recherche Agronomique (ITRA)
Ghana Atomic Energy Commission Laboratory (GAEC), Plant Protection & Regulatory Services Directive (PPRSD)
EnvaServ Research Consult (ERC), SGS Laboratory Services Ghana Ltd.
NIGER
CHAD
NIGERIA
BENIN
TOGO
NIAMEY
N'DJAMENA
ABUJA
LOMÉ
PORTO NOVO
ACCRA
MALABO
YAOUNDÉ
Gao
Tahoua
Maradi
Zinder
Diffa
Moussoro
Dosso
Birnin Kebbi
Sokoto
Katsina
Nguru
Koupéla
Fada N'Gourma
Malanville
Kano
Potiskum
Maiduguri
Cinkassé
Kandi
Zaria
Gombe
Mango
Kaduna
Bauchi
Maroua
Bongor
Djougou
Parakou
Jos
Minna
Kwakuti
Tamale
Sokodé
Tchaourou
Ilorin
Doba
Savalou
Moundou
Lokoja
Makurdi
Ibadan
Okpella
Ngaoundéré
Lagos
Enugu
Benin City
Tema
Elmina
Port of Tema
Port of Lomé
Port of Cotonou
Port of Lagos
Port Harcourt
Calabar
Bertoua
Buea
Douala
Edéa
Kribi
Port of Malabo
Port of Douala
BIGHT OF BIAFRA

LABORATORY TESTING CAPABILITIES

LABORATORY CENSUS BY CAPABILITY TYPE:



LABORATORY PROFILES

BENIN

COTONOU — **LABORATOIRE DES SCIENCES DU SOL, EAUX ET ENVIRONNEMENT (LSSEE) [INSTITUT NATIONAL DE RECHERCHE AGRICOLE DU BENIN (INRAB)]**

Specialties: Soil, Water, Plant, Fertilizer, Environment
Type: Public
Accreditation: MoA-designated
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BURKINA FASO

OUAGADOUGOU — **BUREAU NATIONAL DES SOLS (BUNASOLS)**

Specialties: Soil, Plant, Water, Fertilizer
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Accreditation: MoA-designated
Contact: **Dr. Zacharie SEGDA,** Director General
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OUAGADOUGOU — **INSITUT NATIONAL POUR L'ENVIRONNEMENT ET LA RECHERCHE AGRICOLE (INERA)**

Specialties: Soil, Plant, Water, Fertilizer
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CÔTE D'IVOIRE

ABIDJAN — **ENVAL**

Specialties: Soil, Water, Fertilizer, Pesticide
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cbakary@enval-group.com

ABIDJAN — **LABORATOIRE NATIONAL D'APPUI AU DÉVELOPEMENT AGRICOLE (LANADA)**

Specialties: Soil, Plant, Water, Fertilizer, Pesticide/Ecotoxicology
Type: Public
Accreditation: MoA-designated
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LANADA – ABIDJAN

VRIDI **SOLEVO CÔTE D'IVOIRE**

Specialties: Fertilizer (N, P, K only)
Type: Private
Accreditation No outsourced services
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marc.desenfans@solevogroup.com

VRIDI **YARA CÔTE D'IVOIRE**

Specialties: Fertilizer
Type: Private
Accreditation: (IFA certification)
Contact: **Mr. Kanigui Yeo,** Director General
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GHANA

KWADASO **CSIR-SOIL RESEARCH INSTITUTE**

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Type: Public
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ACCRA **ENVASERV RESEARCH CONSULT (ERC)**

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ACCRA **GHANA ATOMIC ENERGY COMMISSION (GAEC)**

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Director General
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POKUASE **PLANT PROTECTION AND REGULATORY SERVICES DIRECTORATE (PPRSD)**

Specialties: Fertilizer (N, P, K only)
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ACCRA **SGS LABORATORY SERVICES GHANA LTD.**

Specialties: Soil, Water, Fertilizer
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MALI

BAMAKO **LABORATOIRE SOL-EAU-PLANTE (LABOSEP) [INSTITUT D'ECONOMIE RURALE (IER)]**

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Accreditation: MoA-designated
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KATI **PROSLABS MICROBIO CONSULTING**

Specialties: Soil, Plant, Water, Fertilizer
Type: Private
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BAMAKO **TOGUNA AGRO INDUSTRIES**

Specialties: Fertilizer
Type: Private
Accreditation: Member of WAFA, no outsourced services
Contact: **Amos Nomel Agnero,** Plant Manager
+223 65 87 16 23
amos@groupetoguna.com

NIGER

NIAMEY **INSTITUT NATIONAL DE RECHERCHE AGRICOLE DU NIGER (INRAN)**

Specialties: Soil, Water, Plant, Fertilizer
Type: Public
Accreditation: MoA-designated
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Type: International non-profit organization
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CERES-LOCUSTOX FOUNDATION

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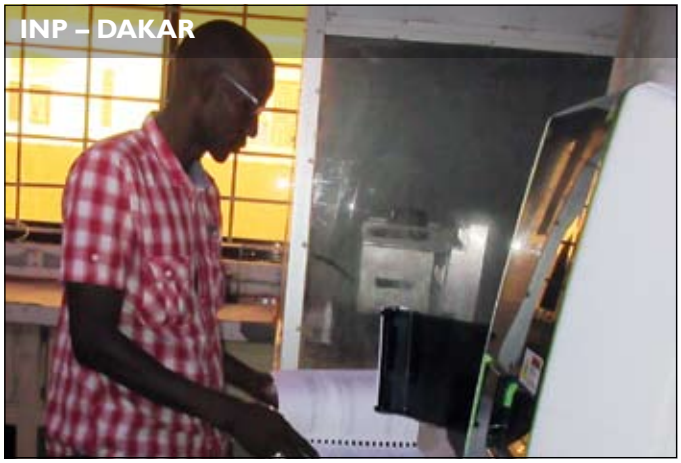

TOGO

LOMÉ

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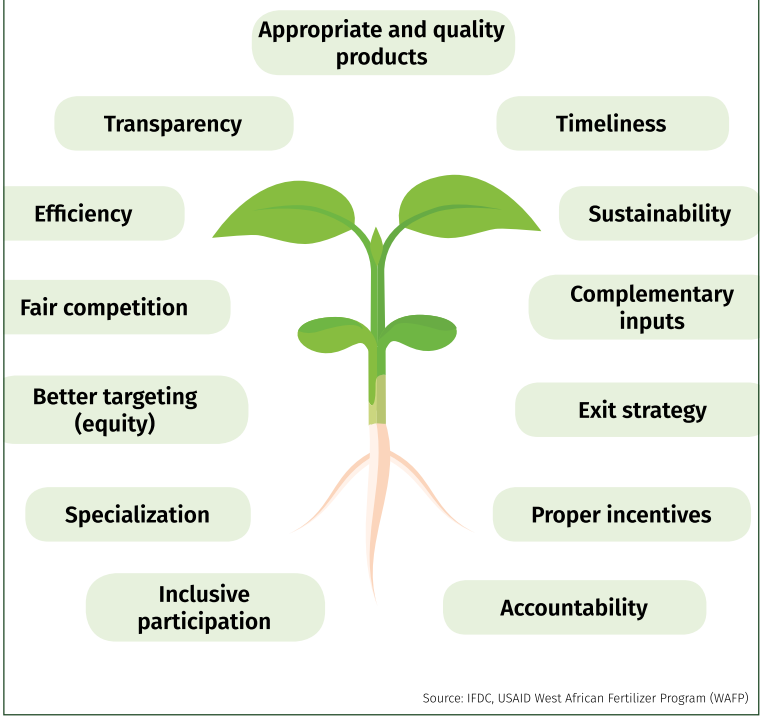
SMART FERTILIZER SUBSIDY GUIDELINES

In the past decade, several governments in West Africa have increased the use of agricultural input subsidy programs within the framework of their policies and strategies to improve agricultural productivity, and food and nutrition security. Several factors inherent to these subsidy programs impede their performance and do not optimize the significant public resources invested.

The Regional Fertilizer Subsidy Program Guide (RFSPG) was designed to encourage the harmonization and increase the performance of agricultural input subsidy programs in ECOWAS Member States, by proposing thirteen "smart" guiding principles. These are, among others, targeting and reaching proper beneficiaries, transparency in the contracting process, devising an exit strategy, private sector participation and/or applying reasonable subsidy rates. The detailed 13 principles and associated actions are presented in the flyer below.

Several ECOWAS Member States have been applying the proposed principles to reform current subsidy programs, with direct or indirect support from IFDC. The table below shows the application of guiding principles by 10 countries, as monitored by EnGRAIS as of September 30, 2020.

13 key principles for smart subsidy programs



Source: IFDC, USAID West African Fertilizer Program (WAFP)

2020 SUBSIDY PRINCIPLES MATRIX

Preliminary results from survey on application of guiding principles by countries to reform their fertilizer subsidy programs as of September 30, 2020.

Principle	Principles being used by ECOWAS Member States (MS) for improved or smart subsidy programs	Burkina Faso	Ghana	Guinea	Mali	Niger	Nigeria	Senegal	Sierra Leone	The Gambia	Togo
1	Inclusive participation	✓	✓	Ⓟ	✓	Ⓟ	✓	Ⓟ	Ⓟ	Ⓟ	✓
2	Specialization	✓	Ⓟ		✓	✓	Ⓟ	✓		Ⓟ	✓
3	Fair competition	✓	Ⓟ	✓	✓	✓	Ⓟ	✓	✓	Ⓟ	✓
4	Efficiency	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ
5	Better targeting	✓	✓		Ⓟ	Ⓟ		Ⓟ	Ⓟ	Ⓟ	✓
6	Transparency	✓	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	✓	✓	✓
7	Timeliness	Ⓟ	Ⓟ		Ⓟ	Ⓟ	Ⓟ	Ⓟ		✓	Ⓟ
8	Appropriate and quality products	Ⓟ	✓	✓	Ⓟ	Ⓟ	Ⓟ	Ⓟ	✓	Ⓟ	Ⓟ
9	Proper incentives		Ⓟ	Ⓟ			✓		Ⓟ		Ⓟ
10	Complementary inputs	✓	✓	✓	✓	✓		Ⓟ	✓	Ⓟ	
11	Exit strategy	Ⓟ			Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	✓
12	Sustainability	Ⓟ		Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	Ⓟ	✓
13	Accountability	✓	Ⓟ		✓	✓	Ⓟ	Ⓟ	✓	Ⓟ	✓
	Overall Progress by MS (number)	7	4	3	5	4	2	2	5	2	8

✓ *Yes, actions have been taken by national governments to reform national fertilizer subsidy programs using at least one of the proposed 13 guiding principles. The green checkmark shows the principle being applied by the given country.*

Ⓟ *This symbol indicates countries that have developed plans to use the corresponding principle.*

(blank) *No action has been taken or planned by a given country to apply the corresponding principle.*

Source: Survey data compiled by EnGRAIS (2020)

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The U.S. Government's Global Hunger & Food Security Initiative

KEY PRINCIPLES FOR SMART FERTILIZER SUBSIDY PROGRAMS

2020 EDITION

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IFDC
Developing Agriculture from the Ground Up

KEY PRINCIPLES FOR SMART FERTILIZER SUBSIDY PROGRAMS

Most West African countries have been implementing fertilizer subsidy programs for many years, but no credible evidence exists to show that these programs have brought about significant or sustained changes leading to the attainment of their set objectives. Fertilizer use levels in West Africa, estimated around 12 kg of nutrient per hectare, remain far below the 50kg/ha objective of the 2006 Abuja Declaration set for 2015. Growth in crop productivity yields and production has been sluggish. Food insecurity and poverty still affect millions of people, especially in rural areas. National fertilizer subsidy programs are very diverse across countries and, above all, costly in terms of scarce public resources used to implement high subsidy rates (40-50%), which almost coincide with the share of in-country costs of the total costs of procuring fertilizers from source to the domestic end users (IFDC, 2016).

Photo by the PARSEN project

Retailers verifying the authenticity of vouchers (Niger).

The Economic Community of West African States (ECOWAS) has expressed concern about the poor performance of fertilizer subsidy programs in the region and stated the need, in its new Regional Agricultural Investment Program for Food Security and Nutrition (RAIPFSN, 2016 – 2020), to harmonize input subsidy policies across Member States in an attempt to improve their effectiveness. One of its main technical partners, the International Fertilizer Development Center (IFDC), has echoed this call and has conducted activities under its USAID-funded West Africa Fertilizer Program (WAFP, which ended on July 31, 2017) to review current fertilizer subsidy programs and make recommendations for their improvement.

The review exercise resulted in the development of 13 key principles and 36 associated actions that provide tested, mutually agreed, and validated guidelines to countries across the ECOWAS region for designing and implementing "smart" fertilizer subsidy programs. This guide will almost certainly be applicable to other agricultural inputs and its effective use is expected to bring about significant changes in fertilizer use, crop yields, and agricultural growth, hence contributing to improve food security and reduced poverty across West Africa.

Each principle has one or more proposed actions to fulfil its goal. Below are the 13 guiding principles, each followed by proposed actions on how to apply them.

This publication was made possible by the generous support of the American people through Feed the Future, the U.S. Government's Global Hunger and Food Security Initiative. The contents are the responsibility of IFDC, and do not necessarily reflect the views of Feed the Future or the United States Government.

PRINCIPLES & ACTIONS

1. INCLUSIVE PARTICIPATION

Promote private sector development and participation.

1. Involve key stakeholders during the design of subsidy programs (public-private partnership).
2. Consult with all major actors or stakeholders during implementation to document challenges that arise and their potential solutions as the process evolves.
3. Promote private sector participation by making it easy to register[1] as a business and building their capacity.

Photo by Mr. Malick Niang (ETG/WAFA)

Offloading of bulk fertilizers in Abidjan port (Côte d'Ivoire).

2. SPECIALIZATION

Roles of all participating actors should be defined and assigned on the basis of specialization and comparative advantage to achieve complementary and exploit potential synergies.

4. Focus Government interventions on the sovereign roles of the State related to creating an enabling environment, setting relevant policy and regulatory frameworks, and coordinating program implementation.
5. Establish regular consultation forums with countries with common land borders to avoid adverse effects resulting from subsidy program implementation (e.g. subsidized fertilizer sold across borders for profit due to differences in prices resulting from different subsidy rates).
6. Leave production, importation and distribution of fertilizers to the private sector.

3. FAIR COMPETITION

Promote competition between private suppliers in order to drive down costs of delivering subsidized fertilizer and increase quality of services provided to farmers.

7. Establish fair, objective and transparent selection system (tender).
8. Eliminate any barriers to entry into market by new fertilizer businesses.
9. Design a tender selection process that incentivizes the development of West Africa suppliers (subregional, national and local) in a sustainable manner.

Photo by CAGIA

AgriPME electronic wallet system (Togo).

[1] *In application of Article 1 (defining fertilizer 'distributor' and 'licensing') and Articles 11, 12, 13 and 14 (relative to functions of fertilizer producer, importer and distributor) of ECOWAS Regulation C/REG.13/12/12.*

4. EFFICIENCY

Use economic efficiency (cost reduction, profitability, economies of scale, etc.) as the basis for fertilizer promotion efforts.

10. Favor market-based solutions that do not undermine incentives and initiatives for private investment.

11. Encourage linking delivery of subsidized fertilizers with the more efficient fertilizer and other input delivery systems associated with cash crops (cotton, cocoa, oil palm, coffee, etc.), so that (i) cash crop producers also receive fertilizer/inputs for their food crops and do not use those intended for cash crops, and (ii) other nearby subsidy beneficiaries receive fertilizers at the lowest cost, ensuring higher productivity for all crops

12. Establish results/performance-based and annually assessed multi-year contracts with selected suppliers to ensure timely fertilizer production, importation and distribution at affordable costs.

Photo by MoFA (Crop Services Directorate)

Farmers waiting to register and buy PFJ subsidized fertilizers at an agro dealer's shop in Damongo (Ghana).

5. TARGETING

Improve targeting by using an inclusive mechanism/approach involving village communities, local administration and authorities, farmer organizations, including those of women, that ensures right beneficiaries (producers, geographic areas, and crops) are properly identified and effectively reached.

13. Give priority to/target farmers not using fertilizers currently but having the potential to increase their production and incomes if they do use them, the most vulnerable producers and crop value chains that have high potential to contribute to growth or food security goals. Reliable agricultural census data may be necessary to ensure and facilitate accurate targeting.

14. Avoid/minimize displacement of commercial sales (crowding out) by subsidized fertilizers that distort fertilizer markets. Avoid areas with already well established and functioning commercial private sector channels for fertilizer.

15. Avoid providing subsidy to areas with proven low fertilizer response rates.

16. Use voucher systems and other ICT tools to reach proper targets through private sector participation.

6. TRANSPARENCY

Ensure transparency in overall targeting and distribution system.

17. Monitor field distribution of subsidized product with the involvement of village communities, local administration, representatives of target farmers: compared to the current mainly manual systems, many new ICT-based ones can more easily and better track field delivery of products to targeted producers, if properly implemented and adapted.

Photo by the PARSEN project

Beneficiaries paying for the non-subsidized portion of the fertilizer price (Niger).

7. TIMELINESS

Rigorously plan and implement program early enough to avoid delays in timely delivery of subsidized fertilizers at affordable costs, to reduce uncertainty and unpredictability with subsidy programs.

18. Plan ahead the full program based on the crop calendar, and not on, as is often the case, political considerations, and respect and enforce deadlines from program design to implementation. The early adoption of natural budget, including that of agriculture, is a favorable step.

19. Publish information on subsidy timing, amounts of fertilizers, and subsidy rates to be adopted well ahead of the season; publish delivery dates and time in advance of the season.

20. Clearly state and announce tender process and rules early enough, especially announcement of subsidy program details well before planting time.

8. APPROPRIATE & QUALITY PRODUCTS

The formulations and quality of subsidized fertilizer should meet requirements established by the relevant research recommendations and regional fertilizer regulations, respectively.

21. Ensure that the most updated fertilizer recommendations by crop and agro-ecological zone exist for areas where the program will operate and that the existing fertilizer private sector can produce/procure appropriate formulations before tendering for fertilizers to be furnished by the program. Support for the development of soil fertility[2] and fertilizer recommendation[3] maps is necessary to determine these formulations.

22. Put in place conditions for adopting and enforcing ECOWAS fertilizer regulations so that subsidized fertilizers meet quality (types, formations, weight, labelling, etc.) specifications.

23. Encourage balanced nutrition including micronutrients as reflected in the products that are imported and/or blended for subsidy.

9. PROPER INCENTIVES

Favor market-based measures that do not undermine incentives to private sector investments. For example, delayed payment to suppliers affects i) private sector investment in markets, ii) farmer participation in fertilizer markets and hence iii) yields and area planted.

24. Consider options, including guarantee funds, to avoid late payment to importers/distributors of the subsidized portions of the fertilizer prices.

25. Establish an "escrow" account where funds are set aside before the season strictly to be used to pay importers and distributors in a timely manner; these funds should be protected from withdrawal other than for the intended purpose.

Photo by the PARSEN project

Example of a fertilizer voucher used in the pilot program.

26. Use IT to better track allocated fertilizer to ensure it goes to intended beneficiaries, for real time verification, reconciliation and reporting of sales by distributors so that payment can be made on time to suppliers.

[2] *cf. ongoing initiatives in some countries in the region with AGRA, OCP, etc.*

[3] *For example, the fertilizer recommendations in West Africa map or FeRWAM (IFDC WAFP).*

10. COMPLEMENTARY INPUTS

Promote fertilizer product as part of a wider strategy that includes complementary inputs (and strengthening of markets).

27. Associate fertilizer with appropriate complementary inputs (seeds, equipment, irrigation, integrated soil fertility management [ISFM], etc.) in a package to be promoted, along with provision of proper information and training.

11. EXIT STRATEGY

Devise a clear exit strategy to limit the duration of public fertilizer subsidy interventions.

28. Embed clear time and objective-bound exit strategy that gradually moves the program from current to future beneficiaries (producers, areas, crops) in real need for subsidy until the program is completely phased out, since public funds are limited and have competing needs.

Photo by Mr. Moussa Dionou (IFDC)

Loading of fertilizers from an agro dealer's warehouse (Burkina Faso).

12. SUSTAINABILITY

To emphasize sustainability of gains in input use and crop yields as the goal when designing the program, tie it to other public investments to support current beneficiaries and product suppliers.

29. Link program to public investments that:

- Ensure access to other yield-enhancing inputs and research and advisory services that maximize the efficiency and profitability of fertilizer use;
- Encourage saving schemes, and remove barriers to access finances/loans by input dealers; and
- Improve physical infrastructure (irrigation, transport, storage, processing, and marketing) that increases the profitability of fertilizer distribution and use and adds value to farm produce.

30. Fund program with domestic resources to improve efficiency and encourage phasing out and eliminating unneeded subsidy programs.

31. Encourage increased participation of private sector in subsidy programs to strengthen and ensure sustainability of input procurement and delivery systems.

32. Ensure that government provides regulatory and quality control oversight.

33. Encourage development/strengthening of regional (ECOWAS) market for both produce and inputs.

13. ACCOUNTABILITY

Impacts of the use of public resources in subsidy program should be objectively and rigorously studied and established.

34. Establish regularly updated farmer/crop databases from reliable agricultural censuses and continuous farm surveys.

35. Monitor program for reliable and accessible data on the basis of specific indicator variables.

36. Conduct evaluations of entire program after each season to gather lessons learned for improvement; possibly establish an independent technical committee involving the public and private sector and the civil society to carry out the impact assessment studies. This will assess performance/impacts against measurable benchmarks (productivity, adoption, private sector involvement, efficiency, etc.). M&E or cost-benefit analysis will reveal the true costs of subsidy and deter over-invoicing on procurement, transport etc. This exercise may lead to encourage private sector participation especially if public funds are limited or constrained.

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FeedtheFuture.gov

This publication on the Regional Fertilizer Subsidy Program Guide was prepared by the Feed the Future Enhancing Growth through Regional Agricultural Input Systems (EnGRAIS) Project for West Africa, the successor to the WAFP, and the Senegal Dundël Suuf Project.

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IFDC Developing Agriculture from the Ground Up

7. PARTNERS

Photo: Patrice Annequin

IFDC
Developing Agriculture from the Ground Up

HEALTHY SOILS – PROFITABLE FARMERS

DEVELOP BETTER TECHNOLOGIES

Working with national, regional, and international partners, IFDC will develop, test, and adapt technologies that improve soil health and plant nutrition for smallholder systems:

- ✓ More efficient and improved fertilizers.
- ✓ Integrated soil management strategies.
- ✓ Mitigation of environmental impact.
- ✓ Technologies to improve degraded soils.

CATALYZE FARM PRODUCTIVITY

IFDC will assess the performance of emerging technologies under smallholder conditions to increase farm productivity, profitability, and sustainability:

- ✓ Incorporate 4R nutrient stewardship.
- ✓ Evaluate environmental impact of improved practices.
- ✓ Women and youth engagement.
- ✓ Scale and sustain adoption of improved technologies.
- ✓ On-farm research to test viability of new technologies.
- ✓ Extend fertilizer recommendations to farmers.
- ✓ Demonstrate best available technologies.

OUR **REACH**

BANGLADESH | BENIN
BURKINA FASO | BURUNDI
CÔTE D'IVOIRE | ETHIOPIA
GHANA | INDIA | KENYA
MALI | MOZAMBIQUE | MYANMAR
NEPAL | NIGER | NIGERIA
SENEGAL | TOGO | UGANDA

VISION

Healthier soils and plants for a food-secure and environmentally sustainable world.

MISSION

Bring together innovative research, market expertise, and strategic public and private sector partners to identify and scale sustainable solutions for soil and plant nutrition that benefit farmers, entrepreneurs, and the environment.

IFDC is a not-for-profit Public International Organization created in 1974, with its headquarters located in Muscle Shoals, Alabama, USA.

IN WEST AFRICA, **IFDC** BRIDGES THE GAP BETWEEN

ENGINEERING & LAB SERVICES

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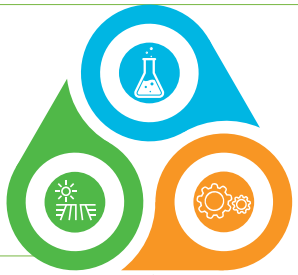
- Research & product development
- Analytical laboratories
- Crop modeling and GIS



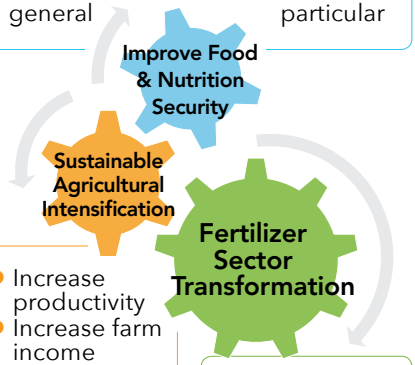
FIELD
- Greenhouses
- Field trials
- Soil SMaRT approach

ENGINEERING & PILOT PLANT
- Continuous granulation pilot plants
- Technical assistance and training
- Physical property testing

APPLIED RESEARCH & INSTITUTIONAL PARTNERSHIPS

FERARI
FERTILIZER RESEARCH & RESPONSIBLE IMPLEMENTATION

- Sub-Sahara Africa in general
- Ghana in particular



- Increase productivity
- Increase farm income
- Develop fertilizer and food value chain

- By developing crop and soil-specific fertilizers
- Outreach to smallholder farmers

Site-specific fertilization is key:
- Evidence of need for NP(K) + micronutrients
- Improves yield and nutritional content
- Enhances systems resilience

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– RESTORED ECOSYSTEMS

STRENGTHEN MARKETS

IFDC functions as an intermediary to connect farmers to input/output markets, and vice versa, ensuring scalability of improved technologies, increased production of commodities in demand, and trust among partners:

- ✓ Scaling assessment to develop inclusive markets.
- ✓ Develop agribusiness clusters.
- ✓ Strengthen capacity of agribusiness clusters.

ENABLE IMPACT

IFDC is committed to providing technical support and training to help countries invest in soil fertility and plant health and equipping partners to identify, develop, and implement key agricultural system changes:

- ✓ Achieve increased investment in soil fertility and plant health.
- ✓ Strengthen capacity to implement policies and regulations.
- ✓ Improve technical capacity of public and private sector partners.
- ✓ Share new knowledge and data.

RESEARCH, FARMS, & MARKETS TO ACHIEVE IMPACT AT SCALE

FERTILIZER MARKETS

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ENHANCING GROWTH THROUGH REGIONAL AGRICULTURAL INPUT SYSTEMS (EnGRAIS) PROJECT FOR WEST AFRICA

EnGRAIS

wafa
West African Fertilizer Association
Association Ouest-Africaine de l'Engrais

- Private sector investment
- Finance & logistics
- Product stewardship

- Balanced fertilizers
- Agro-input packages
- UDP, microdose

CORAF

FEDERATION ECOWAS

- Fertilizer policies
- Regulatory systems
- Smart subsidies

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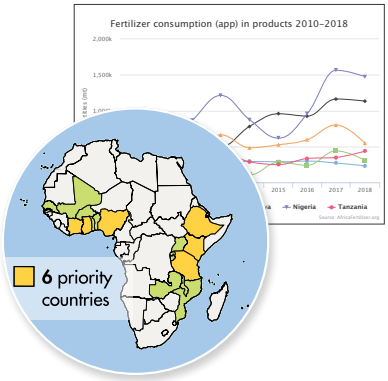
FERTILIZER MARKET DATA

AfricaFertilizer.org

- Fertilizer statistics
- Fertilizer use by crop
- Cost build ups
- Fertilizer market assessments

- Fertilizer plant register
- Fertilizer dashboards
- FertiNews reaching 3,600 subscribers



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INTERNATIONAL FERTILIZER ASSOCIATION

wafa
West African Fertilizer Association
Association Ouest-Africaine de l'Engrais

DEVELOPMENT GATEWAY
Solutions that empower

OUTPUT MARKETS & SMALLHOLDER FARMERS

2SCALE
Incubating and accelerating inclusive agribusiness in Africa

- Improve access to nutritious food for BoP consumers
- Improve livelihoods of smallholder farmers
- Develop inclusive business strategies with local SMEs
- Scale up public-private partnerships
- Promote climate-smart agricultural practices

Ministry of Foreign Affairs of the Netherlands

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SNV

AfricaFertilizer.org

TO FEED OUR PEOPLE WE MUST FIRST FEED OUR SOIL

AfricaFertilizer.org (AFO) is an initiative whose objective is to provide clear, relevant and opportune data and market information on fertilizers in the SSA region, with an aim to support the implementation of continental, regional and national agricultural and more specifically fertilizer policies and regulations, and promote the growth and development of competitive markets, to the benefit of both the public and private sector, and fertilizer stakeholders globally.

The AFO initiative was conceptualized in 2009 by the International Fertilizer Development Center (IFDC). It has been implementing activities across the Sub-Saharan African region with support and funding from the International Fertilizer Association (IFA), the Africa Fertilizer and Agribusiness Partnership (AFAP), and a partnership with the Food and Agriculture Organization of the United Nation (FAO) through its CountrySTAT program.

AfricaFertilizer.org relies on and interacts with major international databases such as FAOSTAT, IFADATA, the World Bank, fertilizer intelligence agencies and several regional and national agro-input market information systems and public institutions as a source for secondary data and market information.

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Key Services and Publications

- Annual fertilizer production, trade and consumption by product and nutrient
- Fertilizer Use by Crop studies
- Register of Fertilizer Manufacturing and Processing Plants
- Annual country fertilizer statistics overviews and factsheets
- *FertiNews*, a free monthly newsletter reaching 3,500+ subscribers globally
- Free-to-use data and information available from our website and social media

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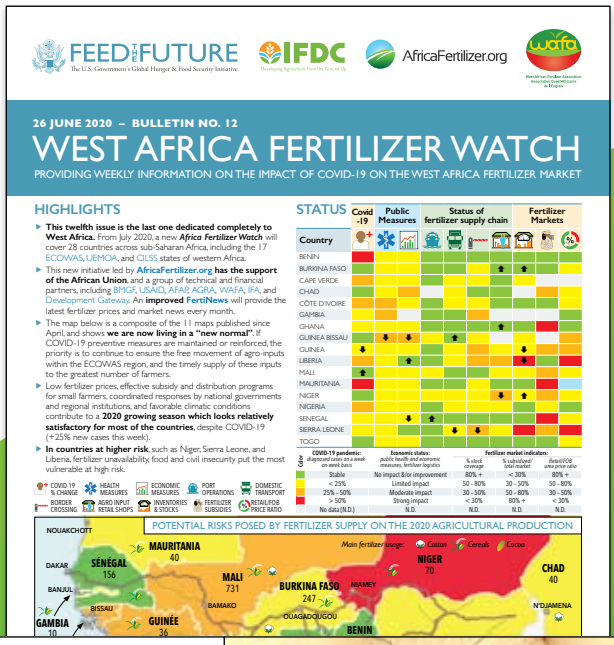
AFRICAFERTILIZER.ORG OFFERS CURRENT MARKET DATA



West African Fertilizer Association
Association Ouest Africaine de l'Engrais

The West African fertilizer industry - united and committed to a wealthy West Africa through sustainable agriculture

Vision

A wealthy West Africa through sustainable agriculture

Mission

To be the fertilizer industry platform for a common voice and action to promote sustainable crop nutrition in West Africa

SINCE 2016

71 MEMBER COMPANIES → **11 COUNTRIES JOINED** → **ACCOUNTING FOR OVER 1 BILLION US$ MARKET**

The Association in collaboration with Argus Media brings together more than 250 participants from 40 countries to its annual conference, West Africa Fertilizer Forum (WAFF)

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7 OBJECTIVES TO BUILD A RELIABLE MARKET THAT GUARANTEES SUSTAINABLE ACCESS TO QUALITY AND AFFORDABLE FERTILIZER TO WEST AFRICAN FARMERS

FINANCE
Improving access to finance along the fertilizer supply chain

STEWARDSHIP
Promoting fertilizer stewardship of key players and farmers to improve consumption and effective use of fertilizers

TRADE
Advocating for regional integration in the ECOWAS region for increased trade

DIALOGUE
Promoting dialogue among private and public stakeholders on crop nutrition and related matters

AVAILABILITY
Improving fertilizer availability down to the last mile

QUALITY
Improving fertilizer quality through self-regulation, promotion of best practices and enforcement of ECOWAS regulations

INFORMATION
Promoting information sharing and improving information dissemination on fertilizer

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ECOWAS

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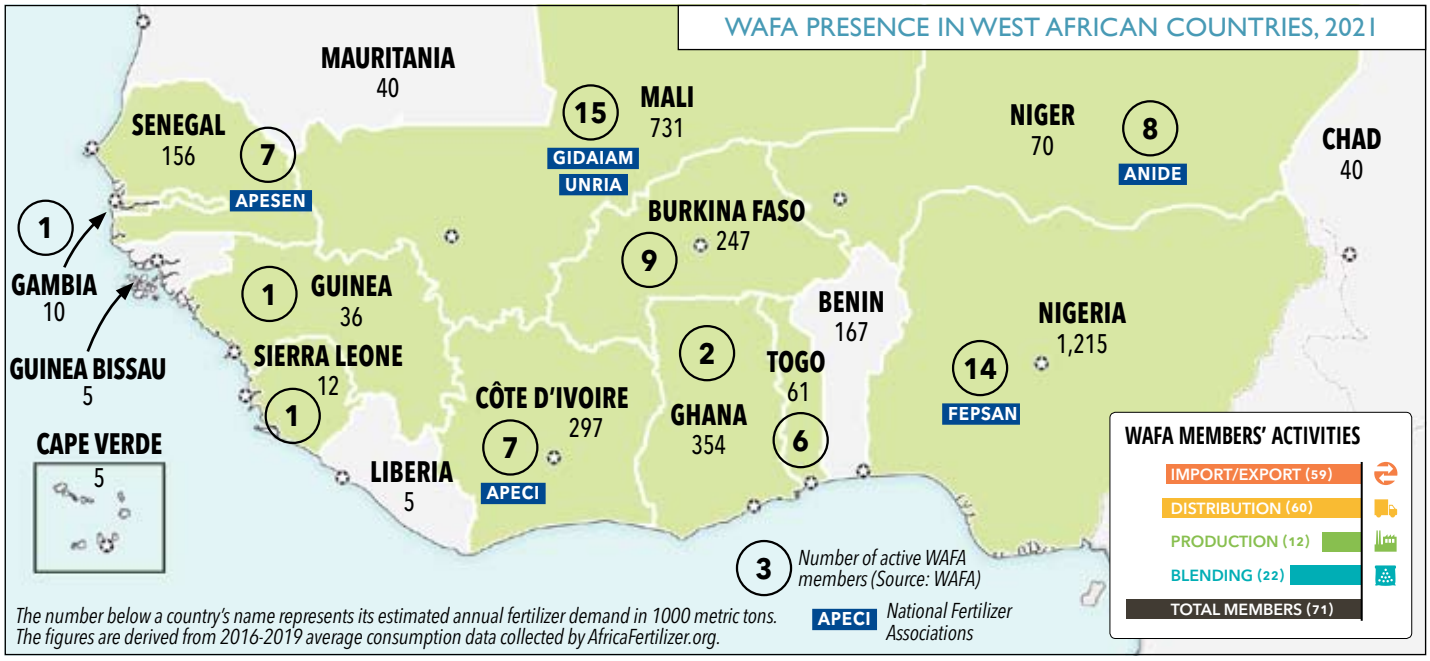
INTERNATIONAL FERTILIZER ASSOCIATION

afap

argus

AfricaFertilizer.org

WAFA MEMBERS DIRECTORY



BURKINA FASO

- CIPAM
- COMPTOIR GÉNÉRAL DES INTRANTS AGRICOLES (CGIA)
- ETW AGRI INVEST
- FASOFERT
- GLOBUS INTERNATIONAL
- IFCA
- SOCIETE D'EXPLOITATION DES PHOSPHATES DU BURKINA FASO (SEPB)
- SOPAM/FERTAFRICA
- TROPIC AGRO CHEM

CÔTE D'IVOIRE

- AFRIGEC
- AGRO WEST AFRICA
- EXPORT TRADING GROUP (ETG)
- OCP AFRICA
- OLAM
- SEAP-CI
- YARA

GAMBIA

- INNOVATIVE TECHNOLOGY SOLUTIONS GLOBAL

GHANA

- AMG
- OMNIFERT

GUINEA

- EKAP GUINÉE

MALI

- ALFAROUK
- ARC EN CIEL
- CARRIÈRES ET CHAUX DU MALI SA (CCM-SA)
- DOUCOURÉ PARTENAIRE AGRO (DPA)
- ÉLÉPHANT VERT
- GNOUMANI SA
- GREAT QUEST FERTILIZER
- SANGOYE SA
- SOCIÉTÉ AFRICAINE DE DISTRIBUTION (SAD)
- SOCIÉTÉ AG MOHAMED HOULOULOU
- SODIFA
- SOGEFERT
- SOMADECO
- SOPROTRILAD
- TOGUNA AGRO INDUSTRIES

NIGER

- AGRIMAIF
- AGRO NIGER CONSULT
- BARHAMA-NEA SARL
- ETS AOM
- FERME SEMENCIÈRE AINOMA
- NIGER INTRANTS SARL
- SOAPAM
- SOFIIA

NIGERIA

- ALBABELLO TRADING COMPANY LTD
- ALBARKA FERTILISER BLENDING CHEMICAL CO.
- ALELAWA FERTILIZER CHEMICAL COMP LTD
- AR-RAHIM SYNERGY
- DANGOTE FERTILIZER
- FERTILIZER FILLER
- GOLDEN FERTILIZER
- INTRIO SYNERGY
- KANO AGRICULTURAL SUPPLY COMPANY
- KAURA SUPPLIES & MARKETING COMPANY
- MBS MERCHANTS
- NOTORE
- ZAMFARA STATE FERTILIZER COMPANY
- ZARA ENERGY RESOURCES

SENEGAL

- AGROPHYTEX
- AMAFRIQUE
- ASPRODEB
- FERMAGRO
- INDORAMA
- SEDAB
- TSE AFRIQUE

SIERRA LEONE

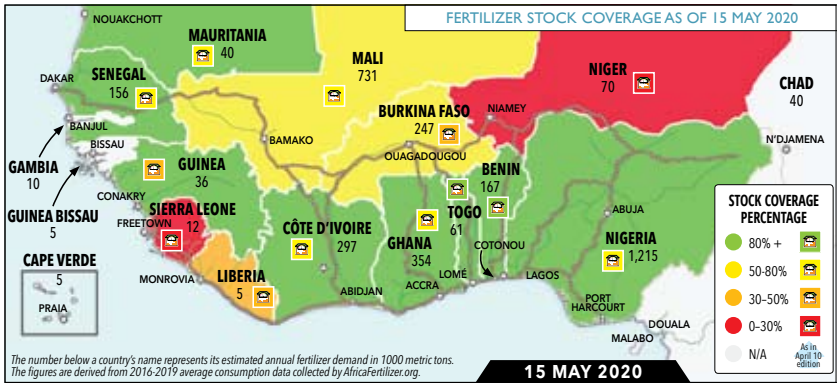
- MANGARA AGRIBUSINESS COMPANY

TOGO

- BIOCHEM
- FREDO VANOS
- GROUPE DEC
- INTERTRADE
- MAGNIFIC'ORSE
- STD

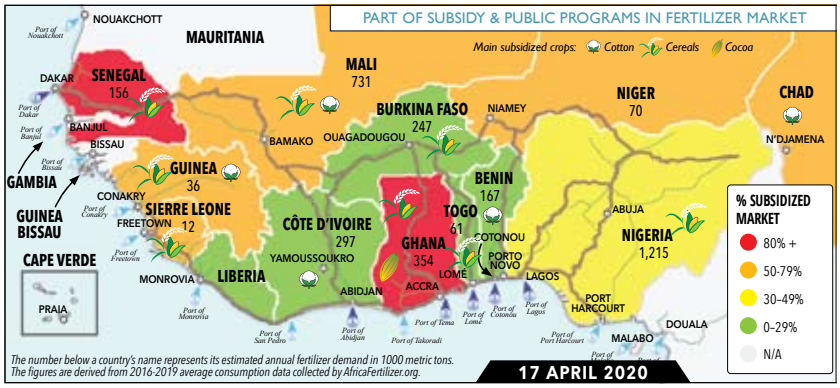
WAFA officers and EnGRAIS staff adjusted their multi-year joint work plan in Abidjan in January 2020.

WAFA RESPONSES TO THE COVID-19 PANDEMIC



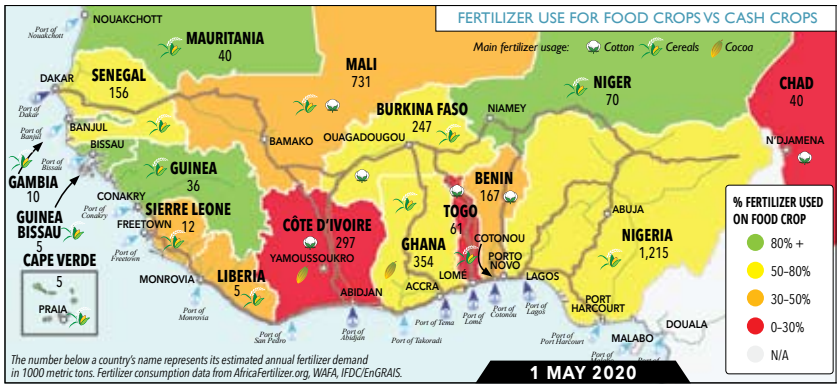
FERTILIZER STOCK BUILT UP

WAFA members stockpiled in anticipation of any disruption in the supply chain due to the COVID-19. As a result, Burkina Faso, Côte d'Ivoire, Ghana, Mali, Nigeria, and Senegal alone imported about 1.1 million tons by May 2020. Fertilizer actors in these countries report that 80% of the season's needs are already in stock. However, smaller markets like Liberia, Niger, and Sierra Leone have covered less than half their fertilizer needs for the season. WAFA aims to put mechanisms in place to consolidate this type of stockpiling in the future.



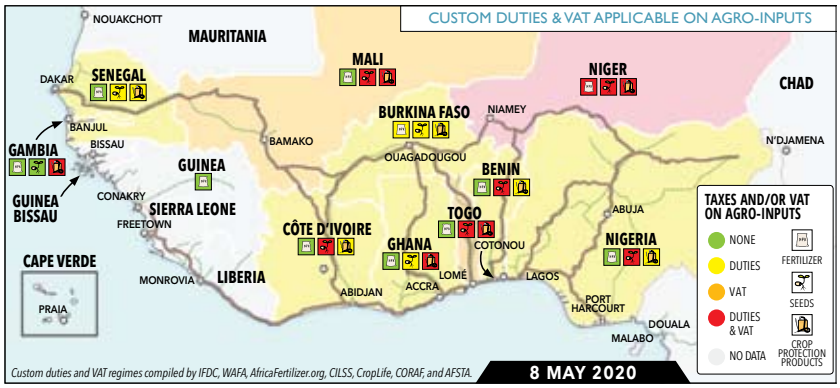
SUPPORTING SUBSIDY PROGRAMS

13 out of 17 countries in the region have fertilizer subsidy programs in place, 7 of which subsidize more than 50% of the national fertilizer market. With 80% of their market subsidized, Ghana and Senegal, have the largest programs relative to their respective market size. While it encourages these policies/programs because they enable better access to fertilizer for smallholder farmers, WAFA is calling on policymakers to ensure timely payments to private suppliers and distributors involved in these programs to ensure their sustainability.



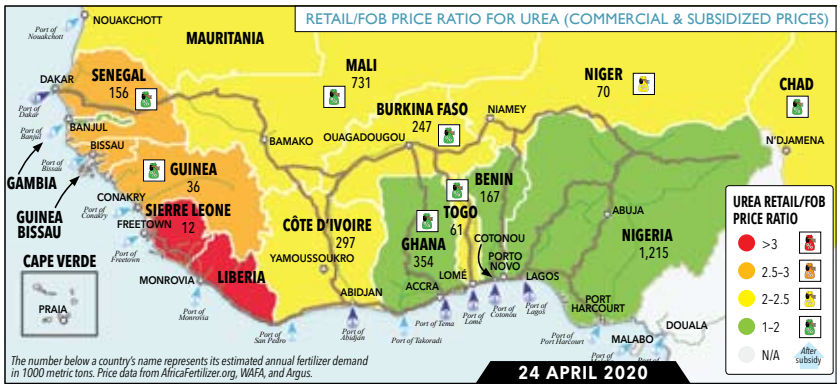
ENCOURAGE FERTILIZER USE ON FOOD CROPS

WAFA members recognize themselves as essential actors in reaching the SDG 2 of zero hunger. Thus, they find it encouraging that 53% of fertilizers consumed in West Africa are used on food crops. However, the region still lags behind the rest of the world in fertilizer consumption per hectare and productivity. To remedy this situation, especially considering the urgency of maintaining food security during the COVID-19 outbreak, WAFA urges governments to invest in supporting farmers to use more fertilizers on their food crops.



MAINTAIN LOW TAXES & DUTIES ON FERTILIZERS

WAFA commends the governments in the region for their stances toward taxation on fertilizers and other agro-inputs in general. Indeed, The Common External Tariff (CET) is followed by most West African countries in general. This means fertilizer is duty free while seeds and pesticides are taxed only at 5%. WAFA calls on Burkina Faso and Niger, where fertilizer is taxed at 5%, to align with the CET. In Niger there is also 19% VAT assessed on fertilizer.



PASS FAVORABLE GLOBAL FERTILIZER PRICES TO FARMERS

While global fertilizer prices are on the low side, retail prices are usually 2 to 2.5 times FOB prices. Subsidy programs and public interventions usually lower this multiplier below 2. WAFA urges countries to pay attention to the different subsidy rates for programs in surrounding countries in setting their own to avoid smuggling of fertilizer from one country to another. Governments and financial institutions' support in fertilizer investment and supply will go a long way toward reducing prices in West Africa.

PAIRED *at a* GLANCE

The Partnership for Agricultural Research, Education, and Development in West Africa (PAIRED) is a five-year intervention funded by the United States Agency for International Development (USAID).
The main goal of PAIRED is to increase agricultural growth, food and nutritional security and reduce poverty in West (and Central) Africa.

PAIRED has three well-crafted components:

1 CORAF capacity strengthened
for effective coordination of agricultural research and development

2 Innovative scaling framework
for Agri-input technologies and innovations (T&Is)

3 Use of quality Agri-inputs
in WA increased

Component 1: CORAF Capacity strengthened for effective coordination of agricultural research and development in West Africa

CORAF continues to rebrand itself as a renewed organization with strong marketing, business development and resource mobilization drive towards realizing its objective of Enhanced Institutional Leadership in increasing Agricultural Productivity in West and Central Africa with a strong sense of accountability. USAID support to CORAF through PAIRED has also resulted in a sustained and growing attraction of a wide range of development partners including the World bank, EU, Swiss Cooperation, IDRC etc.

During its first year of implementation (FY2017-2018), PAIRED through Component 1 supported, the development of key documents namely: a new Strategic Plan (SP) (2018-2027), an Operational Plan (OP) (2018-2022), a dynamic marketing and communication strategy and a resource mobilization plan all adopted by the CORAF General Assembly in April 2018. The new strategic approach addresses serious institutional weaknesses (that occurred between 2014 and 2016) and is supporting the organization to achieve its goal of Increased agricultural growth, food and nutritional security and poverty reduction in West and Central Africa.

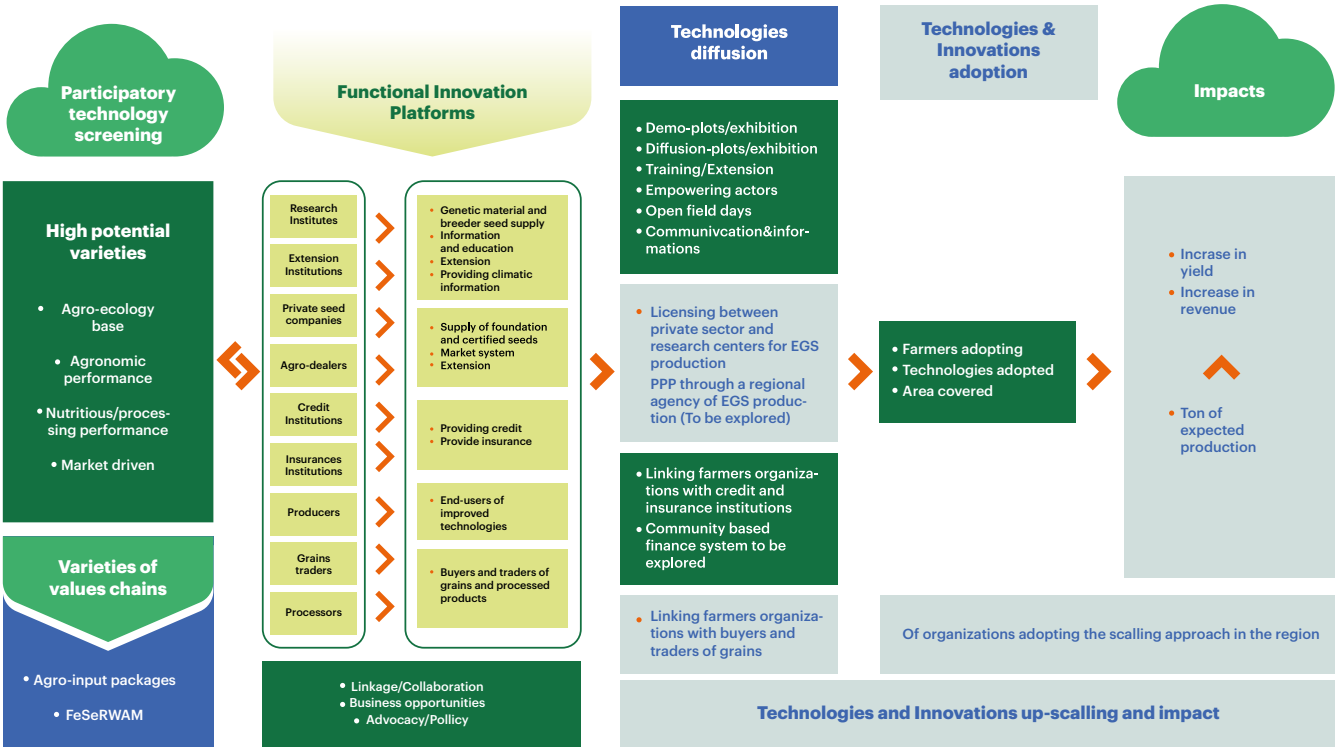
Operationalization of the new frameworks have strengthened donors and stakeholders' confidence in CORAF to move towards achieving its objective - Enhanced Institutional Leadership in increasing Agricultural Productivity in West and Central Africa. Both the SP and OP also provided the required direction for the finalization of Components 2 and 3 of PAIRED thereby aligning the technical components of the program towards the new direction of CORAF; addressing concerns related to climate change, women and youth, food and nutrition security and health.

Component 2: Scaling agriculture technologies and innovations

Scaling existing cutting-edge technologies and innovations In the West and Central African region, is key pathway to boost agricultural productivity in a region with huge productivity gap and endemic food insecurity.

PAIRED has developed an integrated scaling approach aiming to create an enabling environment where cutting-edge technologies are available and accessible and their adoption feasible and sustainable.

The approach comprises an initial participatory screening and selection of proven T&Is with high scalability potential. Scaling of selected T&Is will be fostered through the establishment of multi-actor platforms that creates business opportunities around scalable T&Is by linking actors and fostering collaboration and involving breeders, farmers, agrodealers, processors, and end-users of T&Is. Technology diffusion and adoption is then induced at the level of the community through awareness raising and communication using appropriate channels including demonstration plots, training, field days, exchange visits and radio broadcasting for large diffusion of information. Beside the availability of quality information on the T&Is, other institutional factors involved in the strategy to enhance adoption to boost productivity include access to credit and markets for inputs and outputs.



PAIRED scaling framework

An integrated communication and marketing strategy will support the implementation of scaling activities. The communication and marketing strategy will use a variety of communication supports and tools including digital tools including online platforms FeSeRWAM and MITA.

- FeSeRWAM refers to an online seed and fertilizer recommendation map develop in Partnership with the EnGRAIS an IFDC project is one of the flagship tools that will support the large dissemination of key information on agro-ecological based recommendations of improved seed and fertilizers.

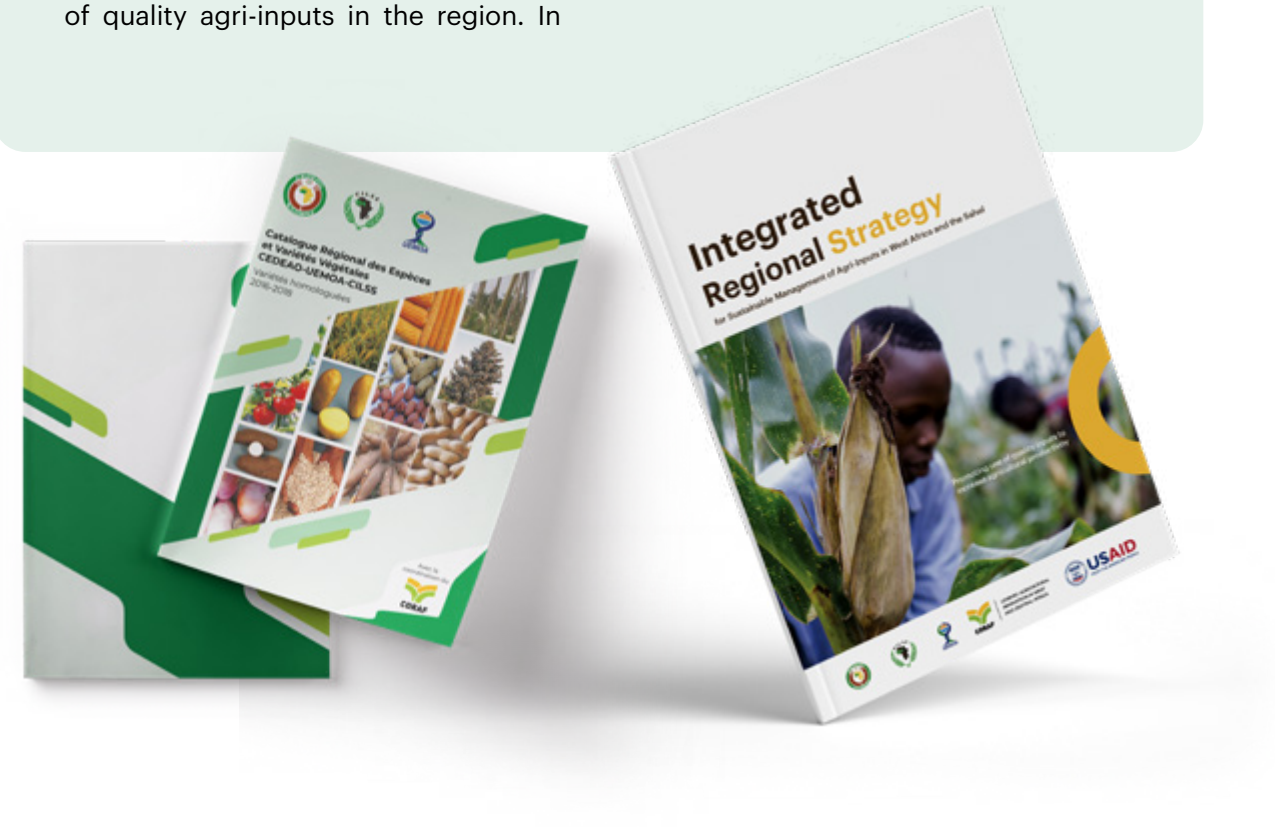
Fertilizer and Seed Recommendations for West Africa Map (FeSeRWAM)

- Market of Agriculture Technology and Innovation (MITA) is another digital platform aiming to display information on existing and available agriculture technologies and innovations that can have a disruptive effect on the productivity, economy, market and farmer livelihood.

Market of Agriculture Technologies and Innovations (MITA) platform

Component 3: Improving access to quality agri-inputs

West Africa continues to face enormous challenges in the production, distribution, and widespread use of quality agri-inputs including certified seeds, fertilizers, and pesticides. Policies that favor the use of fertilizers, high yielding seed varieties are positive determinants of agricultural productivity improvement. CORAF/PAIRED through its Component 3 is strengthening the capacities of the system at the regional level and the capacities of stakeholders within the agri-input value chains, by implementing an integrated regional agri-input strategy for West Africa and the Sahel aiming at increasing the availability, accessibility, and judicious and sustainable use of quality agri-inputs in the region. In collaboration with ECOWAS commission, CILSS, UEMOA and the National Seed Committees, CORAF generates the regional catalogue of plant species and varieties. The catalogue provides passport data of all the varieties useful for quality certification process by the national seed certification agency. The regional catalogue of plant species and varieties will be updated every two years. The Regional Quarantine Pests List (RQPL) was developed, adopted, and largely disseminated to provide the legal umbrella under which the national plant protection agencies operate in delivery of the phytosanitary certificate for seed. In addition, CORAF/PAIRED supported the development of the executive regulation defining the procedures and standards for phytosanitary control and certification of seeds in the region.



For more information, visit :
www.coraf.org/paired/
www.coraf.org

Photo by Patrice Annequin

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IFDC
Developing Agriculture from the Ground Up