ECOWAS Fertilizer Regulatory Framework: Implications for the Development of Private Sector-Led Supply of Quality Fertilizers in West Africa

POLICY BRIEF

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ECOWAS[1] Fertilizer Regulatory Framework: Implications for the Development of Private Sector-Led Supply of Quality Fertilizers in West Africa[2]

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Background

High-quality fertilizers supplied in a timely manner and at affordable prices to knowledgeable farmers through professionalized private supply chains constitute a key outcome of a harmonized regulatory framework that would enable fertilizer markets to properly function at regional and national levels. Policies and regulations are essential levers that the West Africa regional economic integration body – ECOWAS – has used for creating this enabling environment. The importance of a harmonized regulatory framework is manifold. Fertilizer quality control, which relies heavily on the capacity for monitoring, policing, and enforcement, is critical as "the physical attributes and chemical properties of fertilizers to make them effective in providing nutrition for crops and for the consumers of crop products and that make them safe for the ecosystems depend highly on the soundness of the regulatory and legal procedures in place" (IFDC policy briefs, forthcoming). Well-trained operators throughout the fertilizer supply chain with solid and tested experience on fertilizers and with a capacity to apply sound business management practices will rightly react to market signals and proper incentives to ensure efficient procurement and delivery of high-quality fertilizer products where and when needed.

However, in West Africa, the creation of an enabling environment is still an ongoing process not yet completed. Over the last decade, ECOWAS has been developing a regional regulatory and policy framework with the ultimate objectives of harmonizing national regulations and policies across Member States, in line with those stressed in the recent Regional Agricultural Investment Plan for Food Security and Nutrition (RAIP-FSN, 2016-2020). This policy brief shows how quality issues, among other things, triggered the process of setting a regional regulatory framework, describes what the framework entails and its status of implementation across ECOWAS Member States, and draws selected policy and research implications for effective quality control and increased private sector engagement in the fertilizer value chain.

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[1] The Economic Community of West African States (ECOWAS) is the main economic body for regional integration in West Africa and comprises the following 15 Member States: Benin, Burkina Faso, Cape Verde, Côte d'Ivoire, Gambia, Ghana, Guinea, Guinea Bissau, Liberia, Mali, Niger, Nigeria, Senegal, Sierra Leone, and Togo.

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The Starting Point: The 2010 Fertilizer Quality Assessments in West Africa

In the 2010s, studies were conducted to contribute to national and regional efforts to intensify the use of fertilizers, an input declared as "a strategic commodity in achieving the African Green Revolution to end hunger" by African Heads of States and Governments during the Africa Fertilizer Summit, held in Abuja, Nigeria, in 2006. These studies were also meant to serve as a baseline for assessing the performance of the quality control and regulatory mechanisms that are being instituted with the adoption of the regional framework.

Salient Assessment Results

Salient results of the Fertilizer Quality Assessments in West Africa covered the following aspects of fertilizer quality: nutrient content, bag weight, and adulteration.[8]

Nutrient Content Compliance

The nutrient content of a fertilizer is probably the most important quality characteristic. Table 1 shows the out-of-compliance (OOC) frequencies for one or more macronutrients in the most important fertilizers traded in West Africa. Major findings include:

- Nutrient shortages OOC occurred with higher frequency and severity in NPK bulk blends manufactured in the ECOWAS region, as compared with compound (or complex) products. Most of the nutrient deficiencies are due to granule segregation and/or insufficient nutrient inputs at the time of the blending (Sanabria et al. 2013).
- Compound/straight imported fertilizers had less frequent and severe nutrient shortages OOC, but the shortages are still an issue. OOC of compound NPKs may be explained by shortages during manufacture and by granule degradation during handling along the distribution chain (Sanabria et al. 2013).

Adulteration

It should be noted that the only cases of completely proven adulteration are seven samples of single superphosphate (SSP) from Nigeria that were found to have no P_2O_5 nor any of the minerals that carry P in phosphate rock.

Bag Weight Compliance

As shown in Table 2, fertilizer bags being underweight is a serious problem that may be attributed to lack of control in filling and weighing bags during manufacture or re-bagging. This includes inappropriate bag filling procedure and/or equipment. Data also suggest a few cases in which the weight shortages were deliberate[9] (Sanabria et al. 2013).

Other external factors that can influence fertilizer quality include: characteristics of fertilizer markets, fertilizer distributors, storage conditions, and fertilizer products. For example, 68% of caking in urea and NPK 15-15-15 compound in Benin (2014) was due to hot and humid storage conditions and bag stacks with more than 20 bags layers. Market characteristics, such as concentration of dealers and location, also matter as isolated dealers and non-permanent markets had samples with more nutrient content OOC than dealers operating within a market or markets in a permanent location (Ghana, 2010).

[8] Other findings not largely covered in this synthesis include external factors that potentially affect the quality of fertilizers traded in national and regional markets (see forthcoming IFDC country policy briefs for Côte d'Ivoire, Ghana, Mali, Nigeria, and Senegal).

[9] The frequency of deliberate underweighted bags was estimated by subtracting the average random error committed filling and weighing the bag from the frequency of having bags underweighted by more than -0.5 kg.

These assessments, particularly those carried out in 2010, provided references to develop a harmonized regional legal framework for controlling the quality of fertilizers traded within the ECOWAS zone.

Table 1. Frequency of Nutrient Content OOC for Major Fertilizers Commercialized in West Africa

Type of Manufacture	Fertilizer Grade	Number of Samples	Nutrient Content OOC* in One or More Nutrients (%)
West Africa 2010-2013: Côte d'Ivoire, Ghana, Nigeria, Senegal, and Togo			
Bulk Blends	NPK 15-15-15	106	51
	NPK 20-10-10	90	86
	NPK 6-20-10	30	12
	NPK 15-10-10	27	96
	Asaase Wura (NPK 0-22-18+9CaO+7S+5MgO)	23	31
	Cocoa Feed (NPK 0-30-20)	27	26
Compound/ Straight Products	NPK 15-15-15	356	10
	Ammonium Sulfate	340	16
	NPK 16-16-16	162	15
	NPK 23-10-5	103	1
	Sulfan (NPK 24-0-0+6S)	89	3
	Urea	534	4
West Africa 2014-2016: Mali			
Bulk Blends	NPK 15-15-15, NPK 15-15-15+4S, NPK 15-15-15+6S	47	92
Straight Products	DAP	25	17
	Urea	26	11
West Africa 2014-2016: Benin, Burkina Faso, and Liberia			
Bulk Blends	NPK 15-15-15	24	38
	NPK 15-15-15+6S+1B	24	38
	NPK 14-23-14+6S	43	30
Compound/ Straight Products	NPK 14-23-14+5S+1B	36	11
	NPK 23-10-5+3S+2MgO+0.3Zn	57	0
	Urea	136	22

* The nutrient content OOC is assessed using the regulation and tolerance limits adopted by ECOWAS.
Source: IFDC, 2013 and 2018-19 (data from baseline fertilizer quality assessments).

Table 2. Bag Weight Compliance in West Africa: Percentage of Fertilizer Bags Underweight by at Least 0.5 kg

Country	Number of Bags Sampled	Bag Weight OOC (%)*
Côte d'Ivoire	18	28
Ghana	560	12
Nigeria	174	41
Senegal	146	13
Togo	157	6
Mali[10]	97	13
Burkina Faso[11]	277	23
Benin	136	31
Liberia	31	0

* The tolerance limit suggested by ECOWAS for weight departure from the label-specified net weight is 1% of the bag weight, hence 0.5 kg for 50-kg bags. Since bag weights reported in most assessment questionnaires are integers with no decimals, 1.0 kg was adopted as the weight at which a fertilizer bag starts to be out of weight compliance.
Source: IFDC, 2013 and 2018-19 (data from baseline fertilizer quality assessments).

The Current State of Implementation of 2012 Regional Regulations in West Africa

In order to address many of the challenges that constrain availability and use of fertilizer in the region, the ECOWAS and UEMOA[12] Commissions embarked, starting in 2010, on the development of a regional legal framework that harmonizes national regulations governing fertilizer trade and quality control under the

framework of the IFDC-implemented, joint ECOWAS and UEMOA project entitled "Marketing Inputs Regionally (MIR) Plus." 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.

Furthermore, four implementing regulations were adopted in 2016:

1. Roles, organization, and functioning of the West Africa Committee for Fertilizer Control (WACoFeC).
2. Labeling standards and tolerance limits for fertilizers.
3. Inspection of fertilizers.
4. Analysis of fertilizers.

With a mandate given by the ECOWAS Commission in April 2013 to facilitate implementation of the regional fertilizer regulations at the country level, IFDC, through the West Africa Fertilizer Program (WAFP),[13] has supported ECOWAS and its Member States to adopt and implement these regional regulations.[14] As a result of this assistance, the status of implementation stands to date as follows and is summarized in Table 3:

- Twelve Member States (Benin, Burkina Faso, Côte d'Ivoire, Ghana, Guinea, Liberia, Mali, Niger, Senegal, Sierra Leone, Gambia, and Togo) have published the main ECOWAS regulation in their national gazettes.

[10] IFDC report on Fertilizer Quality Assessment in Mali (in preparation).
[11] IFDC report on Fertilizer Quality Assessment in Burkina Faso, Benin, and Liberia (in preparation).
[12] Union Economique et Monétaire Ouest Africaine (UEMOA) or West Africa Economic and Monetary Union.
[13] The WAFP project, a USAID/West Africa-funded project (2012-2017) implemented by IFDC, aimed to increase regional availability and use of appropriate fertilizers in West Africa in support of ECOWAS agricultural policies.
[14] The application process consists of four concrete steps from publishing the ECOWAS regulations in national official gazettes to taking appropriate measures to implement and enforce the adopted regulations.

- 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 were also established/reinforced in six countries (Burkina Faso, Ghana, Mali, Niger, Nigeria, and Senegal).
- The 12 Member States that have published the main regulation in their respective gazettes, plus Cape Verde and Nigeria, have developed at least one country-specific legal instrument/procedure for alignment to harmonized regional quality control rules.
- Nine countries (Benin, Burkina Faso, Ghana, Guinea, Mali, Niger, Senegal, Sierra Leone, and Togo) out of these 12 have adopted at least one country-specific legal instrument/procedure and aligned it to harmonized regional quality control rules.

Table 3. Implementation of Regional Fertilizer Regulations at the National Level

Countries by Tier	Broad Characteristics
Tier 1: Much to be done 8 countries: Côte d'Ivoire, Cape Verde, Gambia, Guinea, Guinea Bissau, Liberia, Sierra Leone, Senegal	• Formal regulatory system for fertilizer not in place. • Registration and licensing sometimes done by the Ministry of Agriculture or Ministry of Commerce/Trade. • Quality control sometimes done by standard board or environmental agency. • Limited awareness of the regional regulations among key stakeholders including many government officials.
Tier 2: Some progress 4 countries: Benin, Niger, Nigeria, Togo	• Legal framework consistent with ECOWAS rules in place (Benin, Niger, and Togo) or finalized and awaiting approval (Nigeria). • Limited implementation of some aspects of the regulations including quality inspections. • Most regulatory staff identified and/or appointed, but not all trained or operational. • National laboratory identified and/or designated with some capacity for fertilizer analysis. • Good progress with sensitization of key stakeholders (Benin, Niger).
Tier 3: Almost there 3 countries: Burkina Faso, Ghana, Mali	• Legal framework mostly consistent with ECOWAS regulations already in place. A review of national legislation for full alignment to ECOWAS legal framework needed. • National laboratory appointed and staffed; capacity improvements ongoing. Limited laboratory operations but contracting with private and public laboratories for fertilizer testing (Ghana). • Measures taken or being taken for monitoring and tracking inspection and general compliance of fertilizer shops (license validity, packaging, labeling, and bag weights). • Systems developed or being developed for registration, import, and license renewal.

Source: Adapted from WAFP, 2014 and World Bank Group, 2015.

Table 3 shows the wide disparity across Member States with respect to the full setting of an effective regulatory framework, despite progress made at the regional level in completing regulations enforceable in all Member States.[15] Several implications can be derived on policy and research grounds on what is left, needed, and can be expected as outcomes or impacts on the fertilizer market at the regional level through interlinked national markets when all Member States effectively enforce the regulations.

[15] Note that national fertilizer laws were passed in Burkina Faso, Mali, and Ghana in 2007, 2008, and 2010, respectively, before the 2012 ECOWAS regulations. The ECOWAS regulation takes precedence over them, but some harmonization is needed in each country.

Key Implications

Policy-Related

Quality Control Capacity

Many ECOWAS Member States still lack necessary technical, human, equipment, and financial resources for effective implementation of the harmonized regional legal framework. Therefore, political commitment and allocation of adequate resources as well as capacity building are key to enforcement and successful implementation.

Quality control systems must ensure that the principle of truth-in-labeling is a reality. However, most laboratories designated for fertilizer testing under the Ministries of Agriculture in West Africa are very familiar with soil, plant tissue, and water analyses, and lack the specifics about fertilizer testing in addition to relevant equipment and qualified staffing to some extent.

Quality control being a governmental oversight responsibility should be extended to public fertilizer tendering systems and subsidy programs when applicable. Quality problems associated with bulk-blended products require that particular attention be paid to strategies to enhance manufacturing knowledge and equipment, particularly for making blends.

Building Capacity of Fertilizer Suppliers

Fertilizer dealer characteristics, such as knowledge and training about fertilizers, type of distributor, and possession of license to sell fertilizers, are equally important indicators of fertilizer quality. Unlicensed retail dealers who sell mainly to small-scale farmers and have no knowledge or training about fertilizers presented a higher frequency of samples of nutrient content OOC. Therefore, appropriate actions should be taken to reverse this trend, including training for fertilizer distributors on various technical topics (appropriate handling of fertilizer products, physical and chemical properties of fertilizers, appropriate storage of fertilizer products, good business practices) and enhancing manufacturing knowledge and equipment for manufacturing blends.

Findings also suggest to policymakers that, while promoting greater fertilizer use, it is sound policy to enforce quality control and promote fair competition among sellers to ensure that farmers get what they pay for and encourage further quality fertilizer use.

Private Sector Engagement in Supply Chains

The regulatory objective of protecting fertilizer companies involved in product manufacture, blending, importation, and distribution should be extensive enough to detect any unlawful practices. Protection afforded to fertilizer companies relieves them of the necessity of self-defense and allows them to concentrate on their core responsibility of delivering quality fertilizers and innovative services to their clientele. By establishing effective and reliable fertilizer regulatory systems, governments thereby ensure that all participants in the fertilizer supply chain can make informed business decisions on quality fertilizer manufacture, blending, and sales. Private sector investors would also benefit from such oversight and enjoy farmer confidence leading to increased sales and incomes, hence increased investments in the fertilizer industry. Partnerships between public and private sectors and self-regulation by the private sector are essential elements for a successful implementation of the regulatory framework. Hence, the private sector can actively participate in improving regulatory oversight and trade regulations by having representation on national committees for fertilizer control as one of the key and front-line players while participating in the WACoFeC meetings, depending on issues for discussion, as prescribed.

Research Implications

Research activities focusing on the current ECOWAS regulatory framework will zero-in on quality issues and the impact of poor-quality fertilizers. These activities will include, but are not limited to, the following:

- Assess the current fertilizer legal and regulatory environment and the fertilizer value chain.
- Strengthen the capacity of ECOWAS Member States to adopt complementary country-specific supporting legal instruments and implement and enforce the harmonized ECOWAS regulations.[16]
- Conduct studies to identify the origin of the quality problems of bulk-blended fertilizers, to assess whether the regulatory framework allows West African fertilizer markets to appropriately handle both compounds and blended fertilizers, and to propose appropriate policy and regulatory solutions.
- Analyze the economic impact of frequent poor-quality fertilizer found in West African countries.

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[16] Capacity strengthening needs will be determined from the assessment of the regulatory environment, which will also cover the quality of existing laboratories in the region.