STRATEGIC FRAMEWORK FOR DEVELOPMENT OF TYPOLOGY-BASED FERTILIZER POLICY AND REGULATORY SYSTEMS IN AFRICA SOUTH OF THE SAHARA

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Executive Summary

Given the degree to which economies in Africa South of the Sahara (ASoS) are dependent on agriculture, agricultural inputs like fertilizer play a critical role. Agriculture contributes an average of 35% of GDP and employs 65% of the population. Despite its importance for the future economic development of the region, however, the performance of the agricultural sector is poor. Cereal yields in Africa South of the Sahara are the lowest in the world, having stagnated at around 1 ton/ha for the past 50 years, compared to 4 tons/ha in developing countries. The key reason for the poor performance of the agricultural sector is the low adoption of modern productivity enhancing technologies such as mineral fertilizers: farmers in the region use on average 17 kg of fertilizer per hectare, compared to their counterparts in Asia, who consume on average 209 kg/ha. The result has been severe soil nutrient depletion, exceeding 60 kg/ha.

The low rate of fertilizer usage is due to a number of supply- and demand-side constraints, which put fertilizer beyond the reach of most farmers including lack of access to finance, a thin network of agro dealers, lack of technical knowledge of appropriate fertilizers, and high transport costs. The policy and regulatory environment often exacerbate the situation. Few countries have in place a predictable, transparent, competitive, and sustainable policy, legal, and regulatory environment governing the fertilizer value chain. Many countries' systems contain notable gaps, including: governments' lack of enforcement capacity to oversee quality control, which increases the risk of adulterated fertilizers; government subsidy programs, which introduce uncertainty into the system and create disincentives for private companies to invest in distribution networks; restrictive regulations, which discourage the production of fertilizer blends which are more suitable for crop and soil nutrient needs; and differences in fertilizer standards or specifications for approved fertilizers, which can translate into non-tariff barriers to trade. The outcome of these constraints is that fertilizer markets in Africa South of the Sahara have failed to reliably provide the right type of quality fertilizers to small-scale farmers in a timely manner and at an affordable price. If agriculture in the region is to become competitive, the performance of fertilizer markets needs to be improved. No single intervention will address these constraints effectively. Rather, a number of interventions are required, and many must be implemented simultaneously, and a stable and transparent policy and regulatory environment that is conducive to market development is an overarching factor to foster the growth of fertilizer markets in the region.

Fertilizer policy and regulatory frameworks in ASoS are at different stages or typologies of development, ranging from non-existent fertilizer policies and regulations and weak institutions for implementation to comprehensive fertilizer policies and regulations and strong institutions for implementation. Accordingly, this document provides a strategic framework for the development of typology-based fertilizer policy and regulatory systems in ASoS.

The first section of this study presents an overview of the problem and highlights the need for stronger fertilizer policy and regulatory systems in ASoS. It also presents the goal and purpose of the framework. The goal is to guide national governments, regional economic communities, development partners, and the private sector in promoting a conducive policy and regulatory environment for fertilizer market systems in ASoS. Accordingly, this framework document is intended to be used as a tool by governments to understand where they fall on the spectrum of the policy, legal, and regulatory frameworks in ASoS and what steps they can take to strengthen their systems in a manner that will result in higher levels of fertilizer use and concomitant higher levels of agricultural productivity and food security.

Section 2 articulates the need for a holistic approach to the development of fertilizer policy and regulatory systems that are conducive to private sector-led fertilizer markets. It also outlines basic analytical principles and requirements, as aligned with the 2019 FAO International Code of Conduct for the Sustainable Use of Fertilizers (FAO, 2019) and the ECOWAS regulatory system, and identifies key constraints to applying the ideal frameworks in the ASoS context. Section 3 applies these analytical elements and principles to develop four typologies of the extant policy and regulatory system in ASoS. It then presents and uses a methodology to assign the 12 ANAPRI target countries to specific typologies based on a set of characteristics and indicators. The purpose is to assist governments to see where they fall in the spectrum. Section 4, then presents typology-based fertilizer programs, which outline specific interventions governments and their development partners can use to move from one typology to the next, and roles for governments, donors, private sector, and NGOs are identified.

To develop the four typologies we used a methodology comprised of 11 fertilizer policy indicators. These indicators include whether or not a country has the following: a fertilizer policy, act and regulations; a dedicated fertilizer regulatory authority; fertilizer quality standards; rules for product and dealer registration; rules on cross-border requirements such as tariffs, taxes and import licenses; and rules on fertilizer subsidies. We used the methodology with the indicators to get a total score for each of the 12 ANAPRI target countries and used the score to assign each country to one of the four typologies.

The four typologies are as follows:

Typology I: A country under **Typology I** is at **the rudimentary stage of development** with regard to its policy and regulatory framework. It is characterized by: the absence of a policy and regulatory framework; small fertilizer market of < 50,000 tons; the government as the main importer and distributor; and a maximum of 1 – 2 importers and no distribution network. Only 1 of the 12 ANAPRI countries falls under Typology 1, namely the Democratic Republic of Congo or DRC.

A country under **Typology II** is at the **nascent stage of development** vis-à-vis its policy and regulatory framework, which means that it is just coming into existence. In terms

of its characteristics, it may have a fertilizer policy, but no fertilizer act or regulations; it has a small fertilizer market of about 50,000 tons; and there are < 5 importers and a thin distribution network. Five of the 12 ANAPRI countries fall under Typology 2: Zimbabwe, Uganda, Namibia, Mozambique, and Senegal.

A country under **Typology III** is at a **growth stage**, meaning that the policy and regulatory framework is established and growing. This stage is characterized by: a fertilizer policy, act and regulations; a fertilizer market of more than 100,000 tons; at least 10 importers, and > 30 Hubs and > 2000 agrodealers. Three of the 12 ANAPRI countries fall under Typology 3: Zambia, Ghana, and Malawi.

A country under **Typology IV** is at the **mature stage**, meaning that the policy and regulatory framework is mature and well-established. It is characterized by: a fertilizer policy, act and regulations; a regulatory authority or strong self-regulation by the private sector; and a fertilizer market of more than 300,000 tons, featuring at least 20 importers and > 50 Hubs and > 3000 agrodealers. Three of the 12 ANAPRI countries fall under Typology 4: Tanzania, Nigeria, and Kenya.

Once we had our four typologies, we then developed 4 typology-based fertilizer programs comprised of interventions countries can introduce to improve their policy environment for fertilizer market development and move up to the next typology. This is best illustrated by looking at an example. To illustrate, under Typology I, the following conditions prevail: the policy and regulatory framework is basically non-existent; the market is very rudimentary featuring a small market size (less than 50,000 tons imported annually); and the private sector is basically non-existent. In this situation, there is no incentive for private investment in fertilizer importation and distribution to smallholder farmers or for smallholder farmer use of fertilizers. The country that falls under this example in the study is the DRC. Under this typology, the priority policy interventions should focus on stimulating demand for fertilizer among smallholder farmers, with a focus on the two priority policy interventions noted below.

1) Fertilizer Subsidies – It should be a universal subsidy with three key components: a) Soil nutrient testing is needed to establish the nutrient needs of the soils, as is development of fertilizer recommendations to guide the types of fertilizer that should be included in the subsidy program and importation of these fertilizer products; b) Extension to teach farmers the correct way to use fertilizers and the benefits of fertilizer use; c) Development of a distribution network by using existing village retailers to distribute the subsidized fertilizer and get paid a commission, which they can reinvest in their business. Eventually, they should be provided with marketing, business management, and technical training to begin to develop a critical mass of agrodealers who will eventually buy and sell fertilizer and other inputs to farmers.

2) Fertilizer Policy - The second priority policy intervention is to develop a fertilizer policy that provides a vision and guidance for the sector. As the market develops and fertilizers and other modern inputs become more well-known to farmers, there will be

an increasing need for political assurance by the government of its commitment to increasing fertilizer use and clarity on the role of the private sector.

This stage is the most resource-demanding and will require sufficient time to generate sufficient effective demand from smallholder farmers who will then justify developing regulations to govern the market and moving to the next stage or typology. This is the " tipping point" at which the country will move into Typology II.

This document provides a strategic framework that national governments, regional economic communities, the private sector, development partners, donors, and other interested stakeholders can use to determine where they fall in the spectrum of typologies of policy, legal, and regulatory frameworks and what actions they can take to establish a more conducive policy and regulatory environment for fertilizer market systems in ASoS. It promotes understanding between the status of the fertilizer market and the policy, legal, and regulatory environment; provides a methodology countries can use to assess where they falls on the spectrum of the existing policy, legal, and regulatory systems for fertilizer in ASoS; and provides a suite of interventions that countries can use to improve their policy, legal, and regulatory systems in order to establish more sustainable, effective, and efficient fertilizer markets that meet the needs of the farming community in ASoS.

However, while this paper addresses an important gap, two points are worth emphasizing. First, the interventions elaborated in this document are not a magic bullet for the establishment of a more conducive enabling environment for fertilizer market development in Africa. As governments use them to develop action plans, they must take into account the particularities of their own situation and adjust the interventions suggested in the action matrix for their typology accordingly. Second, the level of involvement of the public and private sectors varies with the stage of development of the policy and regulatory framework. Nevertheless, it is important to introduce the role of the private sector as soon as possible in the interest of building a sustainable fertilizer market.

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Acronyms

ACDP	Agriculture Cluster Development Program
AFAP	African Fertilizer and Agribusiness Partnership
AIP	Affordable Inputs Program
APP	Agricultural Promotion Policy
ANAPRI	Africa Network of Agricultural Policy Research Institutes
BPS	Bulk Purchasing Scheme
CET	common external tariff
CNREFS	National Committee of Fertilizers and Soil Fertility Reflection
DARS	The Department of Agricultural Research Services
ETG	Export Trading Group
FAO	Food and Agriculture Organization of the United Nations
GESS	The Growth Enhancement Support Scheme
FMR	Fertilizer Management Regulation
KEBS	Kenya Bureau of Standards
KEPHIS	Kenya Plant Health Inspectorate Services
IFDC	International Fertilizer Development Center
ISO	International Organization for Standardization
MAAIF	Ministry of Agriculture, Animal Industry and Fisheries
MoALF	The Ministry of Agriculture, Livestock and Fisheries
NAADS	National Agricultural Advisory Services
NFP	National Fertilizer Program
NM's	Mozambican Norms
NML	New Markets Lab
NPK	Nitrogen, Phosphorus, and Potassium
NTB	Non-Tariff Barrier
OCC	The Office Congolese of Control
PFI	Presidential Fertilizer Initiative
PFJ	Planting for Food and Jobs programme
PPRSD	Plant Protection and Research Service Department
PVOC	Pre-export verification of conformity
SADC	Southern African Development Community
SDS	Safety Data Sheet
SENAFIC	Service National des Fertilisants et Intrants Connexes (National Agency for Fertilizer and Related Inputs)
SSP	Single Superphosphate
TFRA	Tanzania Fertilizer Regulatory Authority
TSP	Triple Superphosphate
UEMOA	Union Economique et Monetaire Ouest Africaine (West African Economic and Monetary Union)
UNBS	Uganda National Bureau of Standards
VAT	Value-Added Tax

ZABS	Zambia Bureau of Standards
ZARI	Zambian Agriculture Research Institute
ZCSA	Zambia Compulsory Standards Agency
ZEMA	Zambia Environmental Management Agency
ZMA	Zambia Metrology Agency

1 Strategic Framework for Development of Fertilizer Policy and Regulatory Systems in Africa South of the Sahara

1.1 Overview of the Problem

The economies of countries in Africa South of the Sahara(ASoS) are heavily dependent on agriculture. It is estimated that more than 70% of the population in this region is involved in agriculture, with the majority being smallholder farmers with less than two hectares. Agriculture contributes an average of 35% of GDP and employs 65% of the population. (OECD-FAO Agricultural Outlook, 2016)

Despite its importance for the future economic development of the region, the performance of the agricultural sector is poor. Cereal yields in Africa South of the Sahara are the lowest in the world, having stagnated at around 1 ton/ha for the past 50 years, compared to 4 tons/ha in developing countries (Macauley, 2015). The key reasons for the poor performance of the agricultural sector are the continued reliance on traditional agricultural practices in the region, including the low adoption of modern productivity enhancing technologies such as quality mineral fertilizers and improved seed varieties, which severely constrain increased yields.

Farmers in the region use on average 17 kg of fertilizer per hectare, compared to their counterparts in Asia, who consume on average 209 kg/ha (AFAP, 2021). The result has been severe soil nutrient depletion, exceeding 60 kg/ha (Wanzala and Groot, R, 2013). The low rate of fertilizer usage is due to a number of reasons including a thin network of agrodealers; lack of technical knowledge of appropriate fertilizers; lack of access to finance all along the value chain, which prohibits the purchases of sufficient quantities to capture economies of scale; and high transport costs due to inadequate ports, rail and road networks, and substantial distances between ports/borders and agriculturally productive areas (Ariga et. al 2018). These factors result in high costs, putting fertilizer beyond the reach of most farmers.

The policy and regulatory environment often exacerbates the situation. Few countries have in place a predictable, transparent, competitive, and sustainable policy, legal, and regulatory environment governing the fertilizer value chain (Ariga et. al 2018). Many countries' systems contain notable gaps, and governments' lack of enforcement capacity to oversee quality control increases the risk of adulterated fertilizers fosters distrust of fertilizer and discourages honest businesspeople from participating in fertilizer trade

Fertilizer recommendations in many African countries are outdated due to defunct or nonexistent research and extension systems that translate into low yields and lack of profitability of fertilizer use, which discourages farmers from using fertilizers (Wanzala et. al 2013).

Government subsidy programs can crowd out commercial demand and introduce uncertainty into the system, which creates disincentives for private companies to invest in distribution networks. Further, government subsidy programs often do not involve the private sector in planning and distribution. Hence the private sector has no incentive to identify which nutrients farmers need for their crops and soils or provide the appropriate blends. Moreover, government policy in many countries discourages blending. Many countries have a list of approved fertilizers. If the private sector wants to introduce a new fertilizer, it must undergo efficacy testing, which can take up to three years, depending upon the country's fertilizer laws and regulations, thus imposing costs the private sector cannot afford. The list of approved fertilizer products also discourages cross-border trade and the development of regional markets. Countries have very strict specifications for approved fertilizers, and although often there are very minor differences in nutrient content, these differences can result in the entry of a new fertilizer product being delayed or even denied (see New Markets Lab 2021, New Markets Lab 2019).

The outcome of these constraints is that fertilizer markets in Africa South of the Saharahave failed to reliably provide the right type of quality fertilizers to small-scale farmers in the rural interior in a timely manner and at an affordable price. If agriculture in the region is to become competitive, the performance of fertilizer markets in the region needs to be improved.

Clearly, no single intervention will address these constraints effectively. Rather, a number of interventions are required, and many must be implemented simultaneously. These include investments in ports, roads and rail infrastructure to reduce transport costs; provision of technical and business training to agrodealers; improved access to finance all along the fertilizer value chain; and development of market information systems. However, an overarching factor to foster the growth of fertilizer markets is a stable and transparent policy and regulatory environment that is conducive to market development.

1.2 Goal of the Framework Document

The goal of this strategic framework is to guide national governments, regional economic communities, and other interested stakeholders, particularly development partners and the private sector, in promoting a conducive policy and regulatory environment for fertilizer market systems in ASoS. This framework is intended to be a tool for any interested stakeholder, but it particularly designed for national governments and regional economic bodies.

The extant policy, legal, and regulatory frameworks in ASoS range from non-existent to comprehensive (New Markets Lab 2021). Governments need to understand where they fall on this spectrum and what steps they can take to strengthen their policy and regulatory environment and hence improve their market performances. Therefore, the purpose of this document is to provide a strategic framework that governments and their development partners can use to:

a) Understand the relationship between the policy, legal, and regulatory environment and the status of the fertilizer market;

b) Assess where they fall on the spectrum of policy, legal, and regulatory systems based on the archetypes; and

c) Develop and implement action plans to improve their policy, legal, and regulatory systems in a manner that will result in higher levels of fertilizer use and concomitant higher levels of agricultural productivity and food security.

1.3 Framework Development Process

This framework was developed by a multidisciplinary team, namely, AFAP, NML and ANAPRI. The team represents expertise cutting across market development, legal expertise, and academia.

1.4 Outline/Structure of the Framework Document

The framework document is organized in three main sections. Section I presents an overview of the problem and highlights the need for stronger fertilizer policy and regulatory systems in ASoS and the goal and purpose of the framework. Section 2 articulates the need for a holistic approach to the development of fertilizer policy and regulatory systems that are conducive to private sector-led fertilizer markets. It also outlines the basic analytical principles and requirements as laid out in the 2019 FAO International Code of Conduct for the Sustainable Use of Fertilizers (FAO, 2019)[1] and the ECOWAS regulatory system[2] , and identifies key constraints to applying the ideal frameworks in the ASoS context. Section 3 applies these analytical elements and principles to develop four typologies of the extant policy and regulatory system in ASoS. It then presents and uses a methodology to assign the 12 country case studies to specific typologies. The purpose is to assist governments to see where they fall in the spectrum. Section 4, then presents typology-based fertilizer programs which outline specific interventions governments and their development partners can use to move from one typology to the next, and roles for governments, donors, private sector and NGOs are identified.

It is important to note that these programs are not a panacea in terms of how best to design and implement fertilizer policy and regulatory systems that are conducive to private sector investment and engagement in fertilizer markets. Rather, they provide a roadmap to strategically address the problem of developing an enabling environment for the fertilizer sector. This is achieved through the identification and analysis of: a) key policy and regulatory constraints, b) possible approaches to overcome those constraints, c) the tools needed to design steps that could be taken to promote the development of such policy and regulatory systems, and d) the roles

[1] Food and Agriculture Organization of the United Nations, "The International Code of Conduct for the Sustainable Use and Management of Fertilizers," Rome, 2019, available at: https://www.fao.org/3/ca5253en/CA5253EN.pdf

[2] Regulation C/Reg.13/12/12 Relating to Fertilizer Quality Control in the ECOWAS Region

of various stakeholders in the fertilizer policy and regulatory system development process. Therefore, users of this document are expected to conduct their own analyses similar to those described in this document and to develop strategies, programs and projects based on those analyses.

2 Development of Fertilizer Policy and Regulatory Systems – Key Components

2.1 Introduction

This section outlines the basic elements of an enabling fertilizer policy and regulatory system using two benchmarks. First, the ECOWAS 2012 Fertilizer Regulations. ECOWAS is the only regional economic community with a regional regulation on fertilizer in effect (New markets Lab and AFAP 2021). The second benchmark consists of good international regulatory practices for fertilizer as spelled out in the 2019 FAO International Code of Conduct on the Use of Fertilizers (FAO Code of Conduct). Therefore, this document will use both of these as benchmarks for good practices in the development of the typologies.

This report describes the principles and requirements of fertilizer policy and regulatory systems that are conducive to the development of sustainable and competitive fertilizer markets and identifies constraints to the application of these idealized systems in Africa. Then, recognizing that just as fertilizer systems are evolving and are at different stages of development, fertilizer policy and regulatory systems also go through stages of evolutionary development from traditional or basic to more advanced, sophisticated systems, the document delineates the different stages of development of policy and regulatory systems in terms of status of the key policy and regulatory indicators and implications for market performance.

2.2 Essential Elements of a Fertilizer Policy and Regulatory Framework/System

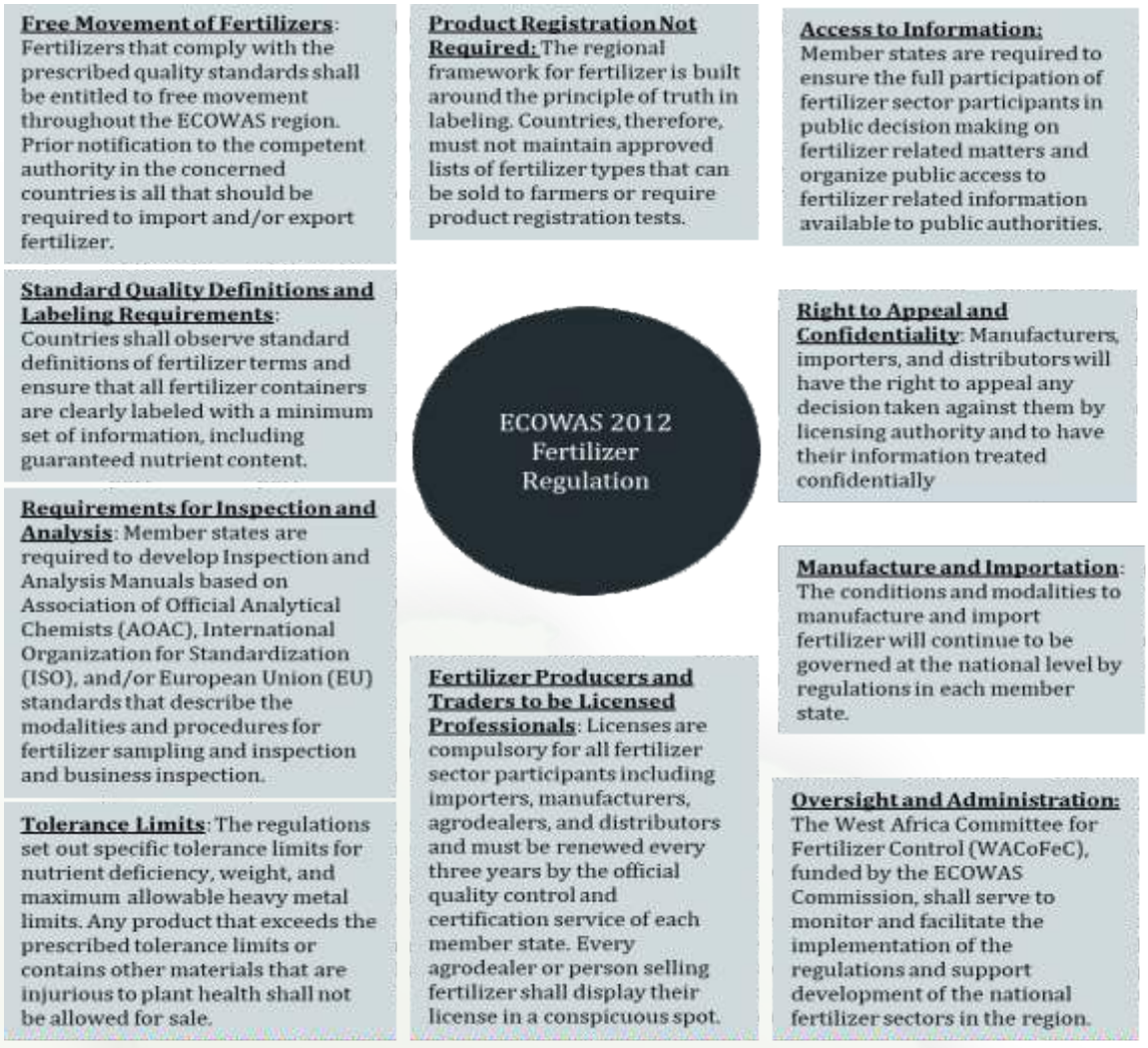
The ECOWAS Fertilizer Regulations harmonize quality control standards throughout the region by adopting common definitions for fertilizer terms, establishing harmonized packaging and labelling conditions, and benchmarking inspection requirements against international standards. Specifically, the ECOWAS fertilizer rules embody the following good practices: free movement of fertilizers; truth-in-labelling, standard quality and labelling requirements, inspection and analysis requirements, tolerance limits for nutrient deficiency, weight and maximum allowable metal limits, licensing of fertilizer producers and dealers, right to appeal and confidentiality, modalities on regulation of manufacturing and import, and administrative oversight.

In addition to these instruments, the FAO Code of Conduct is particularly relevant. The Code of Conduct is a soft law instrument that guides countries in the regulation of fertilizer to enable its sustainable and responsible use and management for agriculture and other plant production purposes in order to avoid negative impacts on human, animal, and soil health and the environment (new Markets Lab, 2021). The Code of Conduct, among other things, calls for countries to implement a fertilizer policy, a quality control mechanism, a registration system, penalties for non-compliance (where appropriate), and regulation of the composition and quality of fertilizers. The Code of Conduct also covers appropriate safety regulations for the production, distribution, storage, handling, transport, and application of fertilizers; evidence-

based sanitary and phytosanitary (SPS) measures and standards (consistent with World Trade Organization (WTO) rules); and limitations and guidelines on harmful contents of fertilizer products. Further, it encourages international harmonization of quality assurance methods, including weights, labelling, and packaging.

Based on the ECOWAS Fertilizer Regulations, the essential elements of a fertilizer policy and regulatory framework for ASoS are depicted in Figure 1 below.

Figure 1: Elements of Fertilizer Policy, Law, and Regulation



Source: "Analysis of the Fertilizer Policy, Legal, and Regulatory Framework in the Southern African Development Community" by New Markets Lab in collaboration with the African Fertilizer and Agribusiness Partnership (AFAP) for the Southern African Development Community (SADC) Secretariat under the project "To Support Development of a SADC Harmonized Regional Fertilizer Regulatory Framework, supported by the Food and Agriculture Organization of the United Nations, October 2021.

Furthermore, fertilizer laws and regulations usually provide for six distinct administrative areas as follows and summarized in Figure 2:

1. Registration of businesses and/or their products (labelled with guaranteed analysis and net weight);
2. Inspection of fertilizer products and records by authorized inspectors (taking sample, noting the legality of the labels, checking bag weights, inspecting records;
3. Analysis of samples taken by inspectors;
4. Financing of the regulatory program through registration fees and inspection/tonnage fees;
5. Administration, enforcement, and assessment of penalties by a designated authority;
6. Publication of findings.

Figure 2: Six Administrative Areas

Source: Adapted from Presentation by Emmanuel Alogniou, Policy Specialist, IFDC, "Updating Regulations to Facilitate Balanced Fertilizers and Private Sector Inclusion," Presentation at the "Bringing Balanced Fertilizers to Small-Scale Farmers" May 27 – 31, 2019, Accra, Ghana. IFDC, "A Strategic Framework for African Agricultural Input Supply System Development" (2000). IFDC, Muscle Shoals.

3 Determination of Typologies of Fertilizer Policy and Regulatory Systems

3.1 Introduction

While fertilizer policy and regulatory systems do not fit a rigid classification or typologies of the stages of market development, articulating the evolutionary process into these stages can be helpful in understanding the driving forces at each stage and actions that may be the most appropriate to help improve the efficiency and effectiveness and promote movement from one stage to the next.

At Stage I, fertilizer markets are also at a very basic stage, whereby fertilizers and other productivity-enhancing inputs such as improved seeds and agrochemicals are not available. Instead, farmers rely on manure, crop residues, and burning to maintain soil fertility and retain their own seed or exchange seed of poor quality and low yield. Here, market development is primarily a public initiative and will focus on market creation. The policy and regulatory system is at a rudimentary stage, inchoate or just begun so not fully formed, and it may even be non-existent (Typology I).

At Stage II, market liberalization has taken place (policy change) and the private sector is allowed to import and distribute fertilizers. Therefore, both the public and private sectors start inputs distribution, but a very small percentage of farmers use chemical fertilizers. They are mainly used by large commercial estates and farmers growing crops to sell on the market for cash and for export. Smallholder farmers use very little fertilizer if at all. The policy and regulatory system is nascent or just coming into existence and beginning to show signs of future potential. It is mainly comprised of a fertilizer policy, but with no fertilizer act or regulations (Typology II).

At Stage III, food and cash crops are increasingly commercialized, and smallholder farmers use more fertilizers. Chemical fertilizers and improved seeds and pesticide use is more widespread. Both the public and private sector are involved in procurement/production and distribution, with more and more of this being taken over by the private sector. This is due to deliberate policy reforms to encourage private sector investment and engagement and an established and growing policy and regulatory framework and institutions. There is still government involvement in the market, particularly via fertilizer subsidy programs, and the regulatory system is not consistently enforced due to insufficient human and financial resources. (Typology III)

At Stage IV, the food and cash crop markets are integrated into global markets. A vibrant fertilizer market has been established and is comprised of an appropriate number of importers, wholesalers, and retailers at each stage of the value chain to ensure availability and accessible of quality fertilizers to all farmers at affordable prices in a timely manner. Therefore, the private sector dominates the supply and distribution of fertilizer, while the government's role is mainly restricted to the provision of an

enabling environment for the fertilizer business, including enforcement of regulations in a manner that encourages rather than stifles innovation and market development. Farmers use higher levels of chemical fertilizers, having been well-trained by both extension officers and agrodealers with regard to the benefits and correct use (fertilizer application in kg/ha; timing; application methods); therefore, they use the fertilizers correctly and obtain the benefits. The policy and regulatory framework is mature, comprised of a fertilizer policy, act and regulations, a regulatory authority or strong self-regulation by the private sector (Typology IV). The development stages of the policy and regulatory systems described above should be considered as a continuum from Stage I through to Stage IV.

The principles and analysis discussed above are used to develop 11 policy indicators, present the methodology (rationale and scoring criteria) for scoring a country and using the score to determine the typology it falls under. It then uses this methodology to score 12 country case studies based on policy studies carried out by ANAPRI centers in each country and assign them to one of the four typologies. The intention is to help these countries understand where they fall in the spectrum of policy and regulatory frameworks and why, and the implications for market performance. In addition, provide some ideas on strategies or interventions they can use to strengthen their policy and regulatory systems and move to the next stage or typology.

3.2 Detailed Policy Indicators - Rationale and Scoring Criteria

As fertilizer markets go through stages of evolutionary development from traditional to advanced systems, so do the associated policy and regulatory systems that support this market evolution. These policy and regulatory systems are generally comprised of key components. Accordingly, 11 policy indicators have been developed with detailed criteria for determining the score and rationale for each indicator. Each country will obtain a score for each indicator and the total score is used to indicate under which typology the country falls.

Likert Scale Score:

1 = Negative impact on market performance
2 = Relatively neutral impact on market performance
3 = Positive impact on market performance
4 = Strong positive impact on market performance

Table 1: Indicator 1: Fertilizer Policy, Law and Regulations

Indicator	Score rationale			
	1	**2**	**3**	**4**
Indicator 1: Fertilizer Policy, Law and Regulations	No fertilizer policy, law or regulations, which has a ***very negative*** impact on market performance	There is a fertilizer policy, or law or regulations (some instruments in place but others missing) but these do not fully address essential fertilizer regulatory aspects. So, while they have a **relatively *neutral impact*** on market performance, there is room for improving the fertilizer regulatory enabling environment.	There is a fertilizer policy, law and regulations (so all instruments in place), but these are missing some key aspects of fertilizer law and regulation. This is a more developed market where the existence of a PLR framework is very important for market performance. This has a ***positive impact*** on market performance, but the system would be more effective if all key aspects of the fertilizer industry were adequately regulated.	There is a fertilizer policy, law and regulations, and all key aspects of the fertilizer industry are adequately regulated. This is a more developed market, where the existence of a PLR framework is very important for market performance. This has a ***strong positive impact*** on market performance
Indicator 2: Dedicated Fertilizer Authority	No Dedicated Fertilizer Authority in place, which has a ***very negative***	There is a Dedicated Fertilizer Authority, but it is deeply under-resourced and under-capacitated to efficiently exercise	There is a Dedicated Fertilizer Authority that is relatively well-resourced and capacitated, to exercise regulatory	There is a Dedicated Fertilizer Authority that is strongly well-resourced and capacitated with efficient oversight of the

	impact on market performance.	regulatory oversight of the fertilizer industry. While the existence of the Dedicated Fertilizer Authority has a **relatively *neutral impact*** on market performance, its limited capacity continues to affect the fertilizer regulatory enabling environment.	oversight of the fertilizer industry. This is a more developed market where the existence of an effective DFA is very important for market performance. This has a ***positive impact*** on market performance, but the system would be more effective if the DFA was strongly well-resourced and capacitated.	fertilizer industry. This is in a well-developed market, where proper and efficient regulatory institutional framework gives the market confidence in the industry, contributing to quality fertilizer and more investment in the industry. This has a ***strong positive impact*** on market performance
Indicator 3: Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	No fertilizer quality standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.) in place at all, which has a ***very negative*** impact on market performance.	There are some fertilizer quality standards, but most are missing (one of these are available, i.e., rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.), or the ones available are incomplete, not comprehensive, and not well implemented in practice. While the few quality standards have a **relatively *neutral impact*** on	Most fertilizer quality standards are in place (two of these are available, i.e., rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.), complete/comprehensive, and relatively well-implemented. This has a ***positive impact*** on market performance, but the system would be more	All fertilizer quality standards are in place, (i.e., rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.), complete/comprehensive, and well-implemented. This has a ***positive impact*** on market performance, but the system would be more effective if the all the standards were in place and fully implemented.

		market performance, there is room for improving the fertilizer regulatory enabling environment.	effective if the all the standards were in place and fully implemented.	This is in a well-developed market, where streamlined rules on quality assurance encourage investment in the industry. This has a ***strong positive impact*** on market performance.
Indicator 4: Fertilizer Quality Rules on Packaging and Labelling	No fertilizer quality rules on packaging and labelling in place at all, which has a ***very negative*** impact on market performance.	There are some fertilizer quality rules on packaging and labelling, but most are missing and/or are incomplete, not comprehensive, and not well implemented in practice. While the few rules have a **relatively *neutral impact*** on market performance, there is room for improving the fertilizer regulatory enabling environment.	Most fertilizer quality rules on packaging and labelling are in place, complete, comprehensive, and relatively well-implemented. This has a ***positive impact*** on market performance, but the system would be more effective if the all the rules were in place and fully implemented.	All fertilizer quality rules on packaging and labelling are in place, complete, comprehensive, and well-implemented. This is in a well-developed market, where streamlined rules on packaging and labelling encourage investment in the industry. This has a ***strong positive impact*** on market performance.
Indicator 5: Quality Assurance Approaches on Product Registration	No fertilizer quality assurance approaches on product registration in place at all, which has a ***very negative*** impact on	There are some rules on fertilizer quality assurance approaches on product registration, but they are incomplete, not comprehensive, not streamlined, or long,	Most rules on fertilizer quality assurance approaches on product registration are in place, complete, comprehensive, and streamlined, and they	All rules on fertilizer quality assurance approaches on product registration are in place, complete, comprehensive, streamlined, short and providing options for fast-

	market performance.	bureaucratic and costly, and not well implemented in practice. While the few rules have a **relatively *neutral impact*** on market performance, there is room for improving the fertilizer regulatory enabling environment.	provide for efficient registration, with rules relatively well-implemented in practice. This has a ***positive impact*** on market performance, but the system would be more effective if all the rules were in place and fully implemented.	tracking of registration, and well-implemented in practice. Where the registration approach is truth-in-labeling, there is a strong, well-resourced, and capacitated regulatory institution to undertake compliance oversight measures. This is in a well-developed market, where streamlined rules on product registration encourage investment in the industry. This has a ***strong positive impact*** on market performance.
Indicator 6: Quality Assurance Approaches on Facility and Dealer Registration	No fertilizer quality assurance rules on facility and dealer registration in place at all, which has a ***very negative*** impact on market performance.	There are some rules on fertilizer quality assurance approaches on facility and dealer registration, but they are incomplete, not comprehensive, not streamlined, and/or long, bureaucratic and costly, and not well implemented in practice. While the few rules on fertilizer facility and dealer registration have a	Most rules on fertilizer facility and dealer registration are in place, complete, comprehensive, and streamlined, and they provide for expedited registration, affordable, with rules relatively well-implemented in practice. This has a ***positive impact*** on market performance,	All rules on fertilizer facility and dealer registration are in place, complete, comprehensive, streamlined, and short, with options for expedited registration. They are also well-implemented in practice. This is in a well-developed market, where streamlined rules on facility and dealer registration

		relatively *neutral impact* on market performance, there is room for improvement the fertilizer regulatory enabling environment.	but the system would be more effective if all the rules were in place and fully implemented.	ease investment in the industry. This has a ***strong positive impact*** on market performance.
Indicator 7: Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes and Duties (VAT, Customs Fees, etc) Import License/Permits And Licenses)	There are no clear rules on fertilizer cross-border trade requirements (including fertilizer tariffs and other taxes and duties (VAT, customs fees, etc.) import license/permits and licenses), which has a ***very negative*** impact on market performance.	There are some rules on cross-border trade requirements (fertilizer tariff and other taxes and duties (VAT, customs fees, etc.) import license/permits and licenses) but they are incomplete/not comprehensive/ not streamlined, or long, bureaucratic and costly, and they are not well implemented or inconsistently applied in practice. While the few rules have a **relatively *neutral impact*** on market performance, there is room for improving the fertilizer regulatory enabling environment.	Most rules on cross-border trade requirements (fertilizer tariffs and other taxes and duties (VAT, customs fees, etc.) import license/permits and licenses) are in place, complete/comprehensive, fairly streamlined, providing a relatively short process of cross-border trade, relatively affordable, and with rules relatively well-implemented in practice. This has a ***positive impact*** on market performance, but the system would be more effective if all the rules were in place and fully implemented.	All rules on cross-border trade requirements (fertilizer tariffs and other taxes and duties (VAT, customs fees, etc.) import license/permits and licenses) are in place, complete/comprehensive, streamlined, providing a short process of cross-border trade, affordable, and with rules well-implemented in practice. This is in a well-developed market, where streamlined rules on facility and dealer registration ease investment in the industry. This has a ***strong positive impact*** on market performance.
Indicator 8: Rules on Enforcement	There are no rules om penalties or	There are some rules on enforcement and seeking	Most rules on enforcement and seeking redress	All rules on enforcement and seeking redress

and Seeking Redress (Fines, Penalties, and Appeals)	seeking of redress, which has a ***very negative*** impact on enforcement and market performance by extension.	redress (including fines, penalties, and appeals), but the fines and penalties are not clear or punitive enough, and the process of seeking redress is incomprehensive and long, bureaucratic, and costly. As a result, enforcement and redress are not well implemented in practice. While the few existing rules have a **relatively *neutral impact*** on market performance, there is room for improving the fertilizer regulatory enabling environment.	(including fines, penalties, and appeals) are in place, with fines and penalties fairly clear and punitive, and the appeals process well-streamlined, short, and affordable, and with rules relatively well-implemented in practice. This has a ***positive impact*** on market performance, but the system would be more effective if all the rules were in place and fully implemented.	(including fines, penalties, and appeals) are in place, with fines and penalties clear and punitive enough, and with clear, streamlined, several alternative, and affordable processes of seeking redress. This is in a well-developed market, where clear and punitive fines and penalties, plus streamlined rules of seeking redress give the industry trust in enforcement of the regulatory framework, which encourages investment in the industry. This has a ***strong positive impact*** on market performance.
Indicator 9: Access to Finance and Availability of Foreign Currency for Fertilizer Importation	There is no forex available for importation of fertilizer, which has a ***very negative*** impact on market performance.	There is some forex available but the process of acquiring it is unclear, long, bureaucratic, and ultimately making it so costly to acquire it. While the existence of forex has a	Forex is available and the process of acquiring it is relatively clear, streamlined, and fairly short (maximum of a couple of days), and with rules relatively well-	Forex is available and the process of acquiring it is very clear and short (a couple of hours), and well implemented in practice. This is in a well-developed market, where availability

		relatively *neutral impact* on market performance, there is room for improving the enabling environment for acquiring forex.	implemented in practice. This has a ***positive impact*** on market performance, but the system would be more effective if all the rules were in place and fully implemented.	of forex and ease in its acquisition encourages investment in the industry. This has a ***strong positive impact*** on market performance.
Indicator 10: Rules on Fertilizer Subsidies	There are no rules on fertilizer subsidies, which has a ***very negative*** impact on market performance.	There are some rules on fertilizer subsidies, but they are incomplete, not comprehensive, not streamlined, or long, and bureaucratic, and not well implemented in practice. While the few rules on fertilizer subsidies have a **relatively *neutral impact*** on market performance, there is room for improving the fertilizer regulatory enabling environment.	Most rules on fertilizer subsidies are in place, complete/comprehensive, streamlined, and with rules relatively well-implemented in practice. This has a ***positive impact*** on market performance, but the system would be more effective if all the rules were fully implemented in practice, with a clear plan for phasing out subsidies.	There are complete rules on fertilizer subsidies in place, complete, comprehensive, streamlined, and well-implemented in practice, with a clear plan for phasing out subsidies. This is in a well-developed market, where streamlined rules on fertilizer subsidies do not interrupt the industry. This has a ***strong positive impact*** on market performance.
Indicator 11: Market Inclusion (Market Dominated by Few Actors, Including Heavy	Rules on market inclusion have enabled only the State to be involved in marketing of	Rules on market inclusion mostly enable/favor the State to be primarily involved in fertilizer marketing, with very limited private sector involvement.	Rules on market inclusion enable both the public and private sectors to engage in marketing of fertilizer, and are relatively well-implemented in	Rules on market inclusion create a good enabling environment for private sector involvement in the marketing and distribution of fertilizer. The private

State Involvement in the Sector)	fertilizer, including imports and distribution, which has a ***very negative*** impact on market performance.	While the limited private sector involvement has a **relatively *neutral impact*** on market performance, there is room for improving the fertilizer regulatory enabling environment to encourage wider private sector investment.	practice. Both the State and the private sector are equally involved in marketing, importation, and distribution of fertilizer. This has a ***positive impact*** on market performance, but the system would be more effective if the regulatory enabling environment was more supportive of private sector investment and involvement.	sector is largely involved in the fertilizer industry, with the State playing a clear regulatory oversight role. This is in a well-developed market, where enabling and streamlined rules on private sector involvement ease investment in the industry. This has a ***strong positive impact*** on market performance.

3.3 Determination of Policy and Regulatory Typology

3.3.1 Typology I

Inchoate or just begun and so not fully formed or developed, rudimentary. Characterized by: absence of a policy and regulatory framework, small fertilizer market of < 50,000 tons, where the government is the main importer and distributor, there are maximum 1 – 2 importers and no distribution network.

A country under **Typology I** is at the rudimentary stage of development vis-à-vis its policy and regulatory framework and would score a maximum of 11 points, that is 11 x 1, represented by the 11 indicators with the negative impact scored at 1.

3.3.2 Typology II

The policy and regulatory framework is nascent or just coming into existence and beginning to show signs of future potential. Characterized by: a fertilizer policy, no act or regulations, small fertilizer market of about 50,000 tons, less than 5 importers and thin distribution network.

A country under **Typology II** is at the nascent stage and would score a minimum of 12 points and a maximum of 22 points, that is 11 x 2, represented by the 11 indicators with the relatively neutral impact scored at 2.

3.3.3 Typology III

The policy and regulatory framework is established and growing. Characterized by: a fertilizer policy, act and regulations, a fertilizer market of more than 100,000 tons, featuring at least 10 importers and > 30 Hubs and > 2000 agrodealers.

A country under **Typology III** is at a growing stage and would score a minimum of 23 points and a maximum of 33 points, that is 11 x 3, represented by the 11 indicators with the positive impact scored at 3.

3.3.4 Typology IV

The policy and regulatory framework is mature and well-established and serves a mature market. Characterized by: a fertilizer policy, act and regulations, a regulatory authority or strong self-regulation by the private sector, a fertilizer market of more than 300,000 tons, featuring at least 20 importers and > 50 Hubs and > 3000 agrodealers.

A country under **Typology IV** is at the mature stage and would score a minimum of 34 points and a maximum of 44 points, that is, 11 x 4 represented by the 11 indicators with the strongest positive impact scored at 4.

4 Rationale and Scoring, Typology Determination and Prioritization Matrix by Country

4.1 Rational and Scoring and Typology Determination

Table 2: Democratic Republic Congo

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	1	There is no Fertilizer Policy, Law and regulation however Law No. 11/022 of December 24, 2011 on Fundamental Principles Relating to Agriculture has provisos on fertilizers. There are no national regulations on fertilizers. However, CEMALA has prepared a decree relating to all agricultural inputs. This decree has not yet been published.
2. Dedicated Fertilizer Authority	1	There is a dedicated fertilizer authority, the National Fertilizers and Related Inputs Service (SENAFIC). But the Ministry of Agriculture does not have inspectors trained to perform the function of controlling the standards of imported agricultural inputs, so fertilizers are found in the markets that are not suited to the needs of farmers. The Office Congolese of Control (OCC) is a normative structure of the Ministry of Foreign Trade. It has a laboratory for inspection of all imports including fertilizers, but it is underequipped.
3. Fertilizer Quality Standards	1	The regulatory law on import, quality control, compliance with fertilizer standards does not exist.
4. Fertilizer Quality Rules on Packaging and Labelling	1	The regulatory law on import, quality control, compliance with fertilizer standards does not exist. Hence there are no rules on packaging and labelling of fertilizers

5. Quality Assurance Approaches on Product Registration	1	The regulatory law on import, quality control, compliance with fertilizer standards does not exist. Hence there are no procedures in place for fertilizer registration
6. Quality Assurance Approaches on Facility and Dealer Registration	1	The Ministry of Finance registers importers of all products including fertilizers. In 2022, the Ministry of Agriculture instructed the Ministry of Finance to require importers of agricultural inputs (fertilizers and pesticides), to present the document of the provisional approval of the imported product issued by him before the customs clearance of their goods. This measure is considered inappropriate by importers of agricultural inputs because no upstream action has been taken beforehand by the Ministry of Agriculture to prepare.
7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes and Duties (Vat, Customs Fees, etc) Import License/Permits And 3Licenses)	1	Customs fees charged at 5% (customs duty) and 16% VAT
8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	1	Article 79 of the 2011 agricultural law stipulates that contravention is punished by a penal sentence of three months to one year and a fine of five million to twenty million Congolese francs (5,000,000 to 20,000,000 FC) or one of these penalties only, anyone who engages in the production and / or import of agricultural inputs in violation of this law and its implementing measures". So, there are rules in place, but implementation is weak.
9. Availability of Forex for Fertilizer Importation	1	Foreign currencies are available on the market and the cost of forex does not pose a problem. But high interest rates and low availability of investment capital pose an obstacle to fertilizer importation. Secondly, the procedures for importing fertilizers are very long, tedious and the guarantees required by commercial banks do not allow economic operators to obtain enough bank loans to ensure imports in the quantity and quality of the fertilizers sought.
10. Rules on Fertilizer Subsidies	1	There is no fertilizer subsidy

11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement in The Sector)	1	The market size is about 5000 tons. The DRC does not produce fertilizers. Imports are either direct imports by agro-industrial companies for their own use and by the government, or donations from various friendly countries such as Belgium, Japan and international organizations such as FAO, WFP. There is a total absence of an organized fertilizer market and competition is limited. Although supply is lower than demand, the fertilizer market does provide an incentive for private sector investment. As for the government (the Ministry of Agriculture), financial difficulties push it to direct its spending towards other priorities than on fertilizers. SENAFIC ensures the distribution of fertilizers through its provincial offices and negotiated relay structures. Sales are made, either in cash or on credit to local grassroots associations (farmers' groups) to better meet the demand created.
Total Score	**11**	
Typology	**I**	

Table 3: Ghana

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	3	National Fertilizer Policy - This is the overarching policy document of the fertilizer sector in Ghana. It is aligned with ECOWAS fertilizer regulatory Framework in terms of quality compliance, registration, and distribution. Plants And Fertilizer Act, 2010 (Act 803). This report is a legal document that stipulates the rules and regulations governing every aspect of the fertilizer value chain in Ghana. Plant Fertilizer Regulations, 2012 (L.I. 2194) (to implement the Act)
2. Dedicated Fertilizer Authority	2	Numerous fertilizer regulatory bodies concurrently exist in Ghana. The Ghana Standards Authority, the Food and Drugs Board, the Plant Protection and Research Service Department (PPRSD); the National Fertilizer Council, Ghana Fertilizer Advisory Committee, Pesticides and Fertilizer Regulatory Division and the Research Institutes are mandated to regulate and control fertilizer quality. So, there are numerous organizations and agencies with the mandate to monitor fertilizer quality, but their execution is inadequate, particularly in more rural areas. Execution and enforcement of regulations are limited due to lack of resources and as a result quality challenges occur along the full spectrum of the fertilizer supply chain. A more effective, well-resourced monitoring mechanism is required to check the quality of fertilizers imported and manufactured locally.
3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	3	The Fertilizer Regulations clearly stipulates the regulations regarding fertilizer control (production, testing, labeling etc.) and its associated sanctions or penalties. There are standards for inorganic fertilizers and guidelines for organic fertilizers. Nevertheless, fertilizer quality problems loom large in the fertilizer value chain. The situation is more precarious in rural areas where the reach of these regulatory bodies is very minimal.

4. Fertilizer Quality Rules on Packaging and Labelling	3	The fertilizer quality standards include rules on packaging and labelling fertilizers.
5. Quality Assurance Approaches on Product Registration	3	The fertilizer regulations include rules on fertilizer registration. New fertilizers are required to be registered. For registration, the fertilizer should be tested in a laboratory to verify nutrient composition and be subjected to field trials in more than two agroecological zones for two cropping seasons.
6. Quality Assurance Approaches on Facility and Dealer Registration	3	To import or manufacture fertilizer one requires a certificate of registration from the Pesticide and Fertilizer Regulatory Division
7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes and Duties (Vat, Customs Fees, etc) Import License/Permits and Licenses)	3	The ECOWAS and UEMOA common external tariff (CET) is well applied for all agricultural inputs, with an almost general exemption for customs duties and VAT for fertilizers. NPK fertilizers, and in particular complex fertilizers, are taxed at 5% duty but are exempt if they are intended for the government subsidy program.
8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	2	There are rules in place for enforcement and seeking redress in the regulations
9. Access to finance and availability of foreign currency for Fertilizer Importation	3	Access to forex is not an obstacle but currency devaluation and high interest rates present serious challenges to importers. Furthermore, some government policies also drive-up costs in the supply chain.
10. Rules on Fertilizer Subsidies	3	There are two subsidy programs: 1) 2008 Fertilizer Subsidy Program which is implemented through the waybill system. This system is not targeted at small-scale farmers; fertilisers are made available to all types of farms and farmers that could afford the subsidized price. Consequently the programme increased access to affordable quality fertilisers and the total amount of subsidized fertilisers increased more than threefold from 43,200mt in 2008 to 150, 000mt in 2011. In the fifth year of the programme, the government introduced a seed subsidy to promote the use of certified seeds and improve the development of the local seeds sub-sector.

		Specifically, maize, rice and soyabean seeds were made available to farmers at a subsidized price. 2) In 2017 the Government introduced the Planting for Food and Jobs (PFJ) programme. This programme provides seeds and fertilizers at subsidized prices and includes complimentary services such as extension, marketing of outputs and e-agriculture. The programme focuses on three key commodity clusters considered as priority crops, (i) cereals (maize, rice, and sorghum); (ii) legumes (soybean); and (iii) vegetables (tomato, onion, and pepper)[3] . The programme is expected to provide 364,233mt of organic and inorganic fertilizers to farmers at 50 percent subsidy. The persistent hike in fertilizer usage could be mainly attributed to two (2) important factors. Namely, Ghana government's intervention including subsidy progammes (2008 and 2017) and private firms' investment in the fertilizer production and marketing distribution channels.
11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement in The Sector)	3	The market is fully liberalized but highly concentrated with about 5 companies accounting for 66% of the market. The government subsidy scheme accounts for over 50% of the market.
Total	**31**	
Typology	**III**	

[3] International Fertilizer Development Center (IFDC). (2019). Ghana Fertilizer Value Chain Optimization Study. *IFDC Report, August*.

Table 4: Kenya

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	3	There is a Fertilizer Act and Draft Regulations There is no separate legislation for the fertilizer sector; it is governed by the following laws: 1) Fertilizer and Animal Foodstuffs Act, CAP 345 (1967); 2) The Penal Code; 3) Standards Act (CAP 496); 4) KEPHIS Act, 2012; 5) Other Acts that govern normal trading such as the Companies and Monopolies Act and the Standards Act. The Fertilizer and Animal Foodstuffs Act, CAP 345 that has been in force since 1967 was amended in 2015 to create a Fertilizer and Animal Feedstuffs Board of Kenya· Fertilizer and Animal Foodstuffs (Fertilizers), Regulations 2021 - (Draft)
2. Dedicated Fertilizer Authority	3	In 2015 a Fertilizer and Animal Feedstuffs Board of Kenya was created but it is not yet operational
3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	3	There are clearly defined standards of the chemical composition and physical type of fertilizer used in Kenya. These standards which are developed by Kenya Bureau of Standards (KEBS) in line with ISO standard procedures. The Fertilizer and Animal Foodstuffs Act is implemented by the Ministry of Industrialization is specifically used by KEBS in implementation of standards for commodities including fertilizer. The KEPHIS Act of 2011 allows Kenya Plant Health Inspectorate Services (KEPHIS) to establish laboratories for the purpose of monitoring the quality and levels of toxic residues in agro inputs, irrigation water, plants, soils and produce. KEBS is primarily responsible for quality assurance on the market through pre-shipment inspections (for which it has engaged the services of independent inspectors such as SGS) and post-importation testing of fertilizers. There are a number of government and private laboratories in the country, but the incidence of sampling is low because of the low number of inspections carried out by KEPHISA and KEBs which is due to insufficient human and financial resources. One result is the presence of adulterated fertilizers in the market.

4. Fertilizer Quality Rules on Packaging and Labelling	3	The following rules that pertain to the fertilizer sector are included in the Fertilizer Act and KEBS fertilizer standards: 1) Packaging of approved fertilizers – providing guidelines for the packaging, branding, and labelling; 2) Declaration and warranty – written warranty to be provided by the seller to the purchaser for all sales of 500kg or more;
5. Quality Assurance Approaches On Product Registration	3	There is an administrative decree providing a listing of fertilizers approved for use in Kenya in the Ministry of Agriculture. The introduction of new fertilizer product to the market requires: an application to a standing committee based at the Kenya Plant Health Inspectorate Services KEPHIS; a minimum of three seasons of efficacy tests and approval by the Ministry of Agriculture based on a recommendations by the committee. Furthermore, The Ministry of Agriculture, private sector and KEBS developed a code of conduct for fertilizer blends.
6. Quality Assurance Approaches on Facility and Dealer Registration	3	There are no laws and regulations that limit the registration of fertilizer import or export businesses. The only requirement to import or export fertilizer is that the private trader must have a valid trade license issued by relevant authorities. There are no rules and regulations governing fertilizer production in the country. Any factory carrying out production is governed by the general factory rules.
7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes And Duties (Vat, Customs Fees, etc) Import License/Permits And 3Licenses)	3	Fertilizer is zero rated and there are no customs duties or VAT on fertilizers, but there is VAT on fertilizer related services. There are also various charges on port handling which can be quite substantive, e.g. the importer declaration fee. These drive up the price of fertilizers.
8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	3	There are rules in place for enforcement and seeking redress in the regulations
9. Availability of Forex for Fertilizer Importation	3	Access to forex is not an obstacle but the high cost of the dollar and high interest rates pose serious challenges to fertilizer businesses at all levels of the supply chain

10. Rules on Fertilizer Subsidies	3	2018 - The Ministry of Agriculture, Livestock and Fisheries (MoALF) developed guidelines for implementation of the government fertilizer subsidy program. National fertiliser subsidy programme was replaced by electronic voucher program (e-voucher program in 2018/2019 due to some challenges such as long distance to the depots, long process of accessing subsidised fertiliser, delays in releasing the budget, and disruption due to importation by the private sector. E-voucher program rolled out in 12 counties in 2019/2020 and later spread to 37 counties in 2021/2022. The government pays 60% and the farmers pays 40% of the fertiliser price.
11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement In The Sector)	4	Four firms contribute to 53% of fertiliser market with Yara, ETG, KTDA, and Elgon Ltd as the largest suppliers (IFDC, 2019). The other players in the markets are MEA, and Omya-ARM (Athi River).
Total Score	**35**	
Typology	**IV**	

Table 5: Malawi

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	2	National Fertilizer Policy, 2021 Fertilizer and Farm Feeds and Remedies Act (1970) Fertilizer Regulations (GN.142/1970 as amended by GN 64/1996) While the key legal instruments are in place, they are all outdated, do not address key aspects, and are not aligned with the principles under the Policy. There is a new Fertilizer Bill, but it is yet to be passed. Regulations under it are yet to be developed.
2. Dedicated Fertilizer Authority	1	There is no specialized dedicated fertilizer regulatory authority. The Department of Agricultural Research Services within the Ministry of Agriculture and the Malawi Bureau of Standards are responsible for oversight of the fertilizer industry and compliance with standards respectively. Both DARS and MBS reportedly have limited resources and capacity to efficiently exercise oversight of the fertilizer industry.
3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	3	There are currently 15 standards for inorganic and organic fertilizers under the Malawi Bureau of Standards Act. If the standard for the blend has not been created, MBS can only provide a voluntary certification based on provided parameters. There are no standards yet for microbial, bio-fertilizers and organics. Adulteration and weaknesses in implementation of quality standards are persistent challenges.
4. Fertilizer Quality Rules on Packaging and Labelling	3	The fertilizer quality standards include rules on packaging for certain fertilizers. Fertilizer containers are required to be duly labelled in English showing the fertilizer specifications.
5. Quality Assurance Approaches On Product Registration	1	The legal framework does not include rules on fertilizer registration. However, in practice, new fertilizers and blends are required to be registered. The Department of Agricultural Research Services (DARS) requires that companies provide evidence of three

		seasons/years of field trial data prior to registration. While this requirement is not established under any regulatory instrument, DARS still applies it as an internal policy before approving and registering any fertilizer. If the product has been used within SADC, it will be trialled on local soils for a year. If the product has not been used within SADC, it has to be trialled for 3 years. The three-year period can be reduced to one and a half or two years if the product is being trialled on irrigated soil. The trials have to be done in all four agro-ecological zones of Malawi. There is a list of registered fertilizers. The Fertilizer Bill includes rules on fertilizer registration, to be clarified by Regulations to be developed under the Bill. The Bill is not yet in place, and Regulations are yet to be drafted.
6. Quality Assurance Approaches on Facility and Dealer Registration	3	Malawi Bureau of Standards visits the factory for an initial audit to ensure compliance. MBS conducts a test of a sample and, on approval, the manufacturer can begin distribution. Monitoring is done every quarter by MBS; after 3 or 4 consecutive instances, the manufacturer is given a full certificate. The Act and Regulations do not require registration of fertilizer dealers. This will change once the Bill is passed, as it requires all fertilizer distributors to be licensed and registered.
7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes and Duties (VAT, Customs Fees, etc.) Import License/Permits and Licenses)	2	Value added tax (VAT) on all fertilizer imports, regardless of origin, is zero/not applied. However, Malawi's Fertilizer Policy notes that there are only two fertilizer blending companies in Malawi and that tax is imposed on the blending ingredients they use.
8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	2	No legal/regulatory framework currently exists for appeals. Offences under the Fertilizer Act are punishable by a fine of less than a dollar (MWK 200, approximately USD 0.2, under the Act and MWK 1,000, approximately USD 0.9, under the regulations) and imprisonment for 6 months. The penalties are reportedly trivial and not punitive. There have been situations in which the MBS has impounded and ordered re-

		exportation of substandard fertilizers. Fines have been previously imposed by MBS on companies not in compliance with certain standards; for example nutrient content not commensurate with labelling on bags. However, enforcement gaps exist further downstream in the distribution channel due to inadequate number of inspectors to check all warehouses and shop outlets for fertilizer distributors, who are numerous.
9. Access to Finance and Availability of Foreign Currency for Fertilizer Importation	1	There are reports of acute shortages of foreign currency, which has affected fertilizer imports. Access to finance is still a challenge, with banks giving loans with over 18% interest rates on average.
10. Rules on Fertilizer Subsidies	2	Under the Affordable Inputs Program (AIP) the private sector imports fertiliser on behalf of the government through an open tender process and sells it to government at an agreed price. The government then distributes fertiliser using its own networks. However, this approach has restrained private sector investment in fertiliser distribution and disconnected smallholder farmers from the market.
11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement In The Sector)	2	The existing rules enable both private and public sector involvement in the fertilizer industry, but the government still has a significant share, with subsidies accounting for up to 42% of the fertilizer market. Private sector presence in the fertilizer market is relatively well-established. There are two blending plants in Malawi that produce mineral fertilizer blends, mainly NPKs. Malawi has 7 importer/blenders, over 100 wholesalers, and over 3000 retailers, and some of the importer/blenders have forward integrated into the distribution network. There are efforts to include the private sector more in the industry under the Fertilizer Policy and draft Fertilizer Bill.
Total	**22**	
Typology	**Typology II – Nascent or just coming into existence and beginning to show signs of future potential**	

Table 6: Mozambique

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	2	The government of Mozambique has established two major policy instruments for improving fertilizer management: 1) The ***National Fertilizer Program (NFP)*** approved by Council of Ministry in 2012; 2) ***Fertilizer Management Regulation*** **(FMR**) approved by to Council of Ministry in 2013, which is a decree which governs the production, importation, and utilization of fertilizers. They expired in 2018 and were revised in 2019 but are yet to be approved.
2. Dedicated Fertilizer Authority	2	No Dedicated Fertilizer Authority. However, The Ministry of Agriculture and Rural Development a central organ of the State Apparatus that is responsible for ensuring the implementation of agricultural policies and legislation through the National Directorate of Agricultural Health and Biosafety, works to ensure compliance with the Fertilizers Management Regulation (FMR) within the country in order to guarantee fertilizer quality. Its powers and functions in regulating of fertilizer sector include supervising, inspecting and controlling all activities related to the production, export, import, transit, registration, transport, use, donation, marketing, handling, disposal and management of fertilizers.
3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	2	The fertilizer regulations include the following provisions with regards to quality control which are implemented by the he Ministry of Agriculture and Rural Development: a) Collect samples, analyse and test the fertilizers distributed in Mozambique, at any time and place and to the extent deemed necessary, to ensure that they comply with the provisions of the Regulation on Fertilizer Management and International Standards, respecting treaties or Conventions Internationals of which Mozambique is a part; b) Ensuring compliance with the rules provided for in the Regulation on Fertilizer Management; (x) Disclose the Regulation on Fertilizer Management.

		There is no quality inspection of fertilizers at the port upon arrival, the country relies solely on pre-shipment inspection by accredited agencies. However, the FMR also *states* that import authorization is issued in favor of the holder of the fertilizer registration or its representative, who is responsible for its quality, and must comply with the standards established in current legislation or, in its absence, with the Mozambican Norms (NM's) in case of non-existence of these, the International Norms apply. In-country testing for nutrient content, although prescribed in the standards, is not required at present due to the absence of fertilizer testing laboratories, lack of trained technicians to sample and test the fertilizer and a lack of trained inspectors to conduct accurate inspections at the ports of entry and further downstream in the distribution channel
4. Fertilizer Quality Rules on Packaging and Labelling	2	There are rules on packaging and labelling in the regulations
5. Quality Assurance Approaches On Product Registration	3	The registration of fertilizer process is done by the implementation of Fertilizer Management Regulation and the first step in the process is registration of the company and the second step is registration of the fertilizer by submitting the RF2 form (Fertilizer registration form nº2), this form is acquired from the National Directorate of Agricultural Health and Biosafety and also should attach: a) The label of the country of origin of the fertilizer; b) The design of the label that will be used in the national territory to be approved by fertilizer authority; c) The product data sheet or Safety Data Sheet (SDS); d) Results of tests carried out within the country or in the SADC region; e) Fertilizer guarantees analysis; f) Authorization from the manufacturer to register the fertilizer in Mozambique; g) Certificate of registration of the product in the country of origin or in the SADC region. There is a list of current fertilizers grades used in the country and their nutrients.
6. : Quality Assurance Approaches on Facility and Dealer Registration	3	Step 1 in the fertilizer registration process is registration of the company with the Ministry of Agriculture and Rural Development. Registration is only completed after

		an inspection of the premises. The Inspector or technical personnel authorized or accredited to carry out the inspection, have free access to all commercial unities or places of production, storage, marketing and for application of fertilizers, and may order for correction of detected defects and also recommend to carry out laboratory analyses;
7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes And Duties (Vat, Customs Fees, etc) Import License/Permits And 3Licenses)	1	Fertilizers are taxed at 2.5% of customs duties and are subject to 17% VAT
8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	1	There is a confidentiality of the process of application of fines and a process for offenders to file a complaint about the fine imposed. Unfortunately, the Fertilizer Management Regulation does not provide any information for the appeal in case of penalty.
9. Availability of Forex for Fertilizer Importation	1	Exporting companies are required by law to bank half of their forex earnings in local currency.
10. Rules on Fertilizer Subsidies	2	Mozambique's Input Voucher Program is comprised by four main steps namely; a) Project design, b) Farmer's selection, c) Agro dealer selection and d) implementation. It is an e-voucher program for 2019 – 2024 involving 30,000 farmers in 10 districts of Nampula and Zambézia provinces. The overarching impact of the project as a whole is to enhance the food security and livelihood status of farmers in poor rural communities to buffer the effects of soaring food prices;
11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement In The Sector)	2	Main Importers: Yara, Omnia, ETG, Mozfert/Meridian The distribution of fertilizers in Mozambique starts with importation, followed by blending, and distribution by private fertilizer companies. Multinational companies like tobacco and the sugar cane companies also import fertilizers directly instead of buying from fertilizer private companies. They are the main consumers of fertilizers. However, rural areas are not yet well-served by the input retail network

		(agrodealers who sell seed, fertilizer and crop protection products) which results in poor access to these inputs. In fact, in many zones, farmers have to travel 10-20 or more kilometres to buy inputs.
Total Score	**21**	
Typology	**II**	

Table 7: Namibia

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	2	Namibia does not have a standalone fertilizer policy that directly deals with the fertilizer sub-sector. However, the sector is supposed to be guided by the Fertilisers, Farm Feeds and Agricultural Remedies (Act No. 36 of 1947) and other proxy policies such as the National Agricultural Policy (2015) and Soil Conservation ACT 76 of 1969. The Fertilizer Act dates back to when Namibia was part of South Africa and this Act which was revised in 1977 is still applicable under Namibian law. The Act uses the regulations which were developed along with the Act. The regulations are not specific to fertilizer but also apply to farm feed and agricultural remedies. The Ministry of Agriculture, Water and Land Reform has received support from the FAO to revise and update the Act and plans to develop a fertilizer policy in 2022.
2. Dedicated Fertilizer Authority	1	No dedicated fertilizer authority
3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	1	In practice, fertiliser quality standards are set at the point of origin (supply source). Quality assurance is enforced by the Ministry of Agriculture, Water and Land Reform in collaboration Namibia Standards Institution. The Namibian Standards Institution (NSI) develops voluntary standards for fertilizers. Furthermore, Namibia through SADC Trade Related Facility project on the Economic Partnership Agreement (EPA) with the EU, developed guidelines on fertilizer standards in line with the EU standards .This mainly to facilitates the market of Table grapes and Dates to the EU market. These standards include max levels for heavy metals such as cadmium and lead. Namibia does not have standards for soil and crop specific blends, lime, foliar, organic fertilizers, biofertilizers, microbial technologies or bio stimulants.
4. Fertilizer Quality Rules on Packaging and Labelling	1	Fertiliser quality standards are set at the point of origin (supply source). Quality assurance in enforced by the Ministry of Agriculture, Water and Land Reform in

		collaboration Namibia Standards Institution. The Ministry of Justice is responsible for gazetting the standards and regulations. The quality control mechanism is truth in labelling, that is, no person shall sell any fertilizer, farm feeds and stock remedies unless the package which is contained has a label stating specified information.
5. Quality Assurance Approaches On Product Registration	2	The regulations provide guidelines and standards for the registration of fertilizer products and fertilizer businesses. The Ministry of Agriculture, Water and Land Reform is the regulatory institution responsible for the registration of fertilizers and fertilizer businesses. and has a list of registered products. The registration takes less than 30 days and the fee is N$ 700. Every application for the registration of a fertilizer shall be submitted to the registrar and shall be accompanied by the prescribed registration fee, and any samples and other particulars as specified by the registrar. After consideration of the application and once upon investigation the registrar is satisfied that the fertiliser in question is suitable and sufficiently effective for the purposes for which it is intended, and complies with such requirements as may be prescribed, and that the establishment where it is manufactured is suitable for such manufacture, he shall register such fertiliser. No field trials for efficacy are required unless requested by the registrar.
6. Quality Assurance Approaches on Facility and Dealer Registration	2	The Ministry of Agriculture, Water and Land Reform is the regulatory institution responsible for the registration of fertilizers and fertilizer businesses. There are no laws and regulations that limit the registration of fertilizer import businesses. The only requirement to import fertilizer is that the private trader must have a valid trade license issued by relevant authorities.

		Any persons wishing to distribute fertilisers in Namibia shall be licensed. Such licensing is subject to the traders providing the following: a) Documentation on source of such fertilizers, including facility approvals by competent authorities; b) Evidence of capacity to store fertilizer safely, This shall be attested by production of valid fertilizer storage certificates. The trading premises must also be registered with the Division of Plant Health.
7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes and Duties (Vat, Customs Fees, etc) Import License/Permits and Licenses)	2	The Ministry of Finance is responsible for the taxation of imported fertilizers. There is an import VAT of 16.5%, however, the fertilizer importers pay and thereafter claim back the import VAT, the claim takes about six (6) months to be refunded.
8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	1	Namibia has inadequate human and financial resources to administration, enforcement and assessment of penalties
9. Access to finance and availability of Foreign currency for Fertilizer Importation	4	There are no restrictions on foreign exchange in Namibia and the currency is stable
10. Rules on Fertilizer Subsidies	2	The Government is also a market actor, procuring fertilizer for its subsidy program: in 2019/2020 the Government procured 360 tons for its subsidy programs; 2020/2021 procured 64 tons and 2021/2022 it will be 350 tons. The government procures the fertilizer for its subsidy scheme through a tender system. The awarded companies procure fertilizer on behalf of government, and government distribute fertilizer to beneficiary farmers across the country at a 50% subsidy. However, the amounts are too small to have an impact on demand and the government may not continue the program due to lack of funds.
11. Market Inclusion (Market Dominated by Few Actors,	2	Fertilizer market is dominated by a few private sector actors. There is some government participation via the subsidy program; fertilizers are imported by both

Including Heavy State Involvement In The Sector)		the government for its subsidy program (with FAO) and the private sector for distribution via wholesalers and agrodealers to farmers who pay full price.
Total	**20**	
Typology	**II**	

Table 8: Nigeria

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	4	Fertilizer Policy Fertilizer Quality Control Act 2019 Fertilizer Quality Control Regulations 2020 Fertilizer Labelling Regulation 2019 Fertilizer Advertisement Regulation 2019 Bio-Fertilizer Registration Regulations 2019 Fertilizer Registration Regulations 2019
2. Dedicated Fertilizer Authority	3	FISS under FMARD. A dedicated fertilizer authority (FISS) exists but it is not sufficiently well-resourced and capacitated to give the expected optimum and efficient oversight of the fertilizer industry
3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	3	Fertilizer Quality Control Act 2019 Fertilizer Quality Control Regulations 2020 Although the Act and Regulations are in place, not all aspects of the industry are adequately regulated as fake fertilizers are still found in the market, there are instances of price hike in remote places and table top retailers are largely uncoordinated.
4. Fertilizer Quality Rules on Packaging and Labelling	3	Fertilizer Labelling Regulation 2019 There is a regulation on labelling t but implementation is weak as the players are many and quality control agents are limited.
5. Quality Assurance Approaches On Product Registration	3	Bio-Fertilizer Registration Regulations 2019 Fertilizer Registration Regulations 2019 The rules are in place and are relatively well implemented.
6. Quality Assurance Approaches on Facility and Dealer Registration	3	Fertilizer Registration Regulations 2019 – the regulations are in place but implementation is weak

7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes And Duties (VAT, Customs Fees, etc) Import License/Permits And 3Licenses)	4	The ECOWAs and UEMOA common external tariff (CET) is well applied for all agricultural inputs, with an almost general exemption for customs duties and VAT for fertilizers. NPK fertilizers, and in particular complex fertilizers, are taxed at 5% duty but are exempt if they are intended for the government subsidy program.
8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	4	There are rules in place for enforcement and seeking redress in the regulations and they are relatively well-enforced.
9. Availability of Forex for Fertilizer Importation	2	The process of acquiring forex in Nigeria is still very cumbersome.
10. Rules on Fertilizer Subsidies	3	The Growth Enhancement Support Scheme (GESS) was introduced in 2012 and this scheme used the e-wallet to provide farmers with subsidized agricultural inputs, such as fertilizers, hybrid seeds, and agro-chemicals. To address some weaknesses found in GESS, the Nigerian government then introduced the Presidential Fertilizer Initiative (PFI) contained in its Agricultural Promotion Policy (APP) document of 2016. The APP gives the private sector control over fertilizer distribution across the country while aiming to increase regional production. The goal of the PFI was to transition the GESS to a more targeted system and start the progressive withdrawal of subsidies by 2020. The PFI was created to guarantee domestic fertilizer output, specifically NPK 20:20:10. The project significantly aided in the reform of the country's fertilizer industry. Before the PFI, there were only ten fertilizer blending facilities in Nigeria, and they were only operating at less than 30% of their installed capacity. There are now 58 fertilizer blending plants in Nigeria and Nigeria has commenced fertilizer export operations to Gabon, Niger, Benin, Congo, and Equatorial Guinea. The agricultural sector now has the certainty of a ready local market for blended fertilizer as well as the opportunity for exporting activities to least African nations.

11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement In The Sector)	3	58 blenders and 3 local manufacturers. The government is also involved in the market through the subsidy program
Total Score	**35**	
Typology	**Typology IV**	

Table 9: Senegal

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	1	Senegal does not have a standalone fertilizer and soil health policies. These issues (fertilizers more than soil health) are only discussed in national agricultural policy documents. The fertilizer sector does not currently have any legislation despite the existence of an implementing regulation on fertilizer quality control carried by ECOWAS since December 2012.
2. Dedicated Fertilizer Authority	1	The National Committee of Fertilizers and Soil Fertility Reflection (CNREFS) was created with the liberalization of the fertilizer market in 2007 to monitor the import and quality of fertilizers at the national level (Fuentes, 2012). But weak implementation in the distribution chain once fertilizer leaves the factory.
3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	2	Regarding the quality control the ECOWAS law is binding for Senegal. In addition, Senegal has a quality control guidelines which include fertilizer standards. There are four public laboratories are available to operators according to Africa Fertilizer (2015).
4. Fertilizer Quality Rules on Packaging and Labelling	2	Regarding the quality control the ECOWAS law is binding for Senegal. In addition, Senegal has a quality control guidelines which include guidelines for packaging and labelling
5. Quality Assurance Approaches On Product Registration	2	The requirement for registration of products is not clear and it is not clear whether there is a list of registered products.
6. Quality Assurance Approaches on Facility and Dealer Registration	2	Regarding the quality control the ECOWAS law is binding for Senegal. In addition, Senegal has a quality control guidelines which include guidelines for facility and dealer registration and inspection of premises.
7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and	4	Regarding taxes and customs duties, the ECOWAS and UEMOA CET is applied, with a general exemption for customs duties and VAT for fertilizers.

Other Taxes and Duties (Vat, Customs Fees, etc) Import License/Permits and Licenses)		
8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	2	Senegal has a quality control guidelines which include the rules for enforcement but actual enforcement of quality controls is inadequate due to lack of resources.
9. Access to finance and availability of Foreign currency for Fertilizer Importation	2	In the fertilizer sector, the "Banque Agricole" formerly known as CNCAS is positioned as the main financial partner of importers and farmers.
10. Rules on Fertilizer Subsidies	2	In Senegal, agriculture has always received considerable support from the state through a policy of input price support since independence (IPAR, 2015). Indeed, subsidizing fertilizer prices has often been at the heart of the intervention policies of successive governments since independence. For example, in current agricultural policies, the Fertilizer Program is expected to mobilize a financial envelope of more than 100 billion per year, released from the national budget (PNIASAN 2018). Thus, between 2018/2019 and 2022/2023, it was planned to inject about 703,307,930,669 FCFA to improve the partial subsidy of 50,000 to 80,000 tons of fertilizer all formulas combined. The performance of the agricultural sector does not reflect the magnitude of the resources mobilized to support the sector i.e., the input price support program. IPAR (2015) identifies three categories of constraints that are financial, technological, and institutional. First, on the financial level, producers use almost all their own funds, which are not sufficient to pay for the quantity of fertilizer needed for production and to comply with quality standards. Secondly, at the institutional level, there is poor organization of the subsidy and support provided by the state and the absence of regulations and price regulations. Finally, at the technical level, the absence of training on good practice, the absence of appropriate equipment and

		the absence of physical-chemical measurements to determine the chemical composition of compost.
11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement In The Sector)	2	Since 2014 the market has been liberalized and the private sector fertilizer distribution network has played an important role in fertilizer importation and distribution replacing the former state monopoly. However, Fertilizer suppliers' activities depend strongly on the subsidized fertilizer market. Indeed, the unsubsidized fertilizer market constitutes a relatively small part of the fertilizer flow in Senegal
Total	22	
Typology	II	

Table 10: Tanzania

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	4	The Fertilizer Policy has been integrated into the National Agricultural Policy Fertilizer Act, of 2009; Fertilizers Regulations of 2011 (as amended in 2017).
2. Dedicated Fertilizer Authority	3	Tanzania Fertilizer Regulatory Authority (TFRA) is the dedicated fertilizer regulatory authority. It is reportedly under-resourced with low capacity. For instance, it lacks its own laboratory.
3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	3	Mandatory fertilizer standards exist for inorganic and organic fertilizers; chemical specifications of individual nutrient levels; physical specifications; packaging, labelling, storage and handling; and sampling and testing. Tanzania does not have standards for microbial or bio-fertilizers, and there are no specifications set for heavy metals contaminants levels/maximum limits for heavy metal contamination.
4. Fertilizer Quality Rules on Packaging and Labelling	4	The Fertilizer Regulations include detailed packaging requirements for solid and liquid fertilizers and their volumes. The regulations include detailed prescriptions of what should be included on the label and how it should be affixed.
5. Quality Assurance Approaches on Product Registration	4	For new fertilizers, the TFRA director or an authorized person carries out laboratory and field tests for one cropping season in at least two agro-ecological zones to determine suitability for use. Fertilizer must be tested based on analytical methods described in the third schedule of the regulations. Blends are not to be subjected to field testing as long as the results of the laboratory test and soil analysis show that the blend is suitable for use (Regulation 4). Fertilizer is not subject to re-registration. There is a list of registered fertilizers.
6. Quality Assurance Approaches on Facility and Dealer Registration	4	Fertilizer Plants are required to be registered by the TFRA once they meet the criteria in the regulations. The license issued is valid for three years. All fertilizer dealers are required to have a license issued by the Fertilizer Board. Once a license is issued, the TFRA enters the licensee's name in the register. The dealer license is valid for a period of not more than two years.

7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes and Duties (VAT, Customs Fees, etc.) Import License/Permits and Licenses)	4	VAT for all fertilizer imports, regardless of origin, is zero/not applied.
8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	3	Appeals are handled by the Minister within thirty days of receiving the decision in question. The Minister may hear appeals through the Appeals Board constituted by the Minister. The Tanzanian Fertilizer Act and Regulations have penalties for general fertilizer offenses and compensation for damages. The Act also stipulates fines and imprisonment for sub-standard products. However, there are inadequate technical and administrative staff, including inspectors and analysts, in the districts as well as insufficient Procurement Management Unit staff at headquarters.
9. Access to Finance and Availability of Foreign Currency for Fertilizer Importation	1	Access to forex is reportedly challenging due to bureaucratic processes. Regarding access to finance, local banks charge high interest rates (20% to 30%) and have stiff collateral requirements (as high as 150 percent collateral).
10. Rules on Fertilizer Subsidies	2	In the past, various subsidy schemes were introduced to increase access by smallholder farmers to appropriate fertilisers. These included the National Agricultural Inputs Voucher Scheme in 2008, which made available subsidized fertilizer and seed to beneficiary farmers using a voucher. It was market-friendly, as the subsidised fertiliser was targeted to farmer beneficiaries who had not previously purchased fertilizer, while the importation and distribution of the subsidised fertiliser was managed by the private sector based on government directives regarding quantity and value. In 2017, the government introduced the Bulk Purchasing Scheme (BPS), which managed to contain fertilizer costs and control agro-dealer malpractices. In 2021, the BPS was halted/scrapped and now anyone can import and sell at market price.

		In April 2022, the government introduced a new fertilizer subsidy, covering about half of the cost of fertilizer for farmers. It is too early to assess the success in implementation of the subsidy, and there is yet to be a clear exit plan that can leave farmers self-sustained.
11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement in the Sector)	4	The existing rules enable both private and public sector involvement in the fertilizer industry. Private sector presence in the fertilizer markets is relatively well established. There is one blending plant, and Tanzania has 53 importers/distributors, 35 wholesalers, and over 4000 retailers (only about 1800 are registered). The government scrapped the BPS in 2021, creating room for more private sector involvement in the fertilizer industry.
Total	**36**	
Typology	**Typology IV: Mature market– Established and growing (minimum of 34 points and a maximum of 44 points)**	

Table 11: Uganda

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	2	National Fertilizer Policy (2016) adopted There are draft Fertilizer Control Regulations (2012); they need to be finalized and adopted. National Organic Agriculture Policy, 2019. A draft organic agriculture bill has been prepared for approval and, once, adopted it will lead to regulations for organic fertilizers.
2. Dedicated Fertilizer Authority	2	No Dedicated Fertilizer Authority. In Uganda fertilizers are regarded as agrochemicals, so their regulation falls under the jurisdiction of the Department of Crop Inspection and Certification within the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) which regulates seeds, pesticides, and fertilizers. Thus, anything to do with fertilizers is regarded and treated as an addition to the regulation of seeds and pesticides. There is one fertilizer desk officer, who has the main responsibility of collecting data on fertilizer imports. All importers must be registered with MAAIF and must declare the quantity of fertilizer, country of origin and port of entry. In addition, within the supply chain, two levels of regulatory activities are carried out: i) Inspection and enforcement to regulate against counterfeit fertilizers and other agricultural chemicals; and ii) Taking samples and analysing them at the crop inspection laboratory. Regulation of fertilizer is spearheaded by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF), Department of Crop Inspection and Certification, agrochemicals division. Foliar and organic fertilizers are subjected to tests to ascertain the level of concentration of active substances. However, it is not a requirement to subject them to laboratory tests

3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	2	There are draft Fertilizer Control Regulations (2012) which covers aspects related to fertilizer including standards, storage, use, safety, and trade. However, it needs to be finalized and adopted. Hence, currently fertilizer quality standards are set at the point of origin (manufacturing company) where three certifications are done. First, there is a testing laboratory to analyze fertilizer produced culminating into a certificate of analysis. Then, inspection is undertaken on behalf of Uganda National Bureau of Standards (UNBS) by an accredited institution at the point of origin. At point of origin of fertilizer, there are two certifications (certificate of origin issued by the manufacturing company) and the standards body (UNBS) which produces a certificate of pre-export verification of conformity (PVOC) to standards. PVOC is supplied to MAAIF, URA, and UNBS for monitoring of fertilizer imports. UNBS penalises the importer if the fertilizer lacks the PVOC and is forced to have the fertilizer analysed.
4. Fertilizer Quality Rules on Packaging and Labelling	2	There are draft Fertilizer Control Regulations (2012) which covers aspects related to fertilizer including labelling and packaging. However, it needs to be finalized and adopted.
5. Quality Assurance Approaches On Product Registration	2	There are draft Fertilizer Control Regulations (2012) which covers aspects related to fertilizer registration. However, it needs to be finalized and adopted.
6. Quality Assurance Approaches on Facility and Dealer Registration	2	All importers must be registered with MAAIF. There are draft Fertilizer Control Regulations (2012) which covers aspects related to registration of premises and dealers. However, it needs to be finalized and adopted.
7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes And Duties (Vat, Customs Fees, etc) Import License/Permits And 3Licenses)	2	Fertilizer are zero rated but there is a 6% withholding tax paid by importers.

8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	2	There are draft Fertilizer Control Regulations (2012) which covers aspects related to rules on enforcement and seeking redress. However, it needs to be finalized and adopted.
9. Availability of Forex for Fertilizer Importation	4	There are no restrictions on foreign exchange in Uganda. However, the high cost of the dollar and high interest rates pose challenges for fertilizer businesses.
10. Rules on Fertilizer Subsidies	2	The World Bank-funded Agriculture Cluster Development Program (ACDP) implemented by the National Agricultural Advisory Services (NAADS) provides subsidized inputs, including fertilizer, via an e-voucher program targeting 68% of farmer population in poverty. It is to be piloted first in 6 districts in Northern Uganda, with an eventual target of 40 districts out of 121 over 5 years. Status: The Agricultural Cluster Development Program, which employs the e-Voucher mechanism, has made a positive contribution to the fertilizer use trajectory in Uganda. Within 3 years (2017-2020), farmers had accessed and used 8,442 tonnes of fertilizer (MAAIF, 2020). Out of 121 districts in Uganda, the ACDP program is implemented in 42 districts by MAAIF with funding from the World Bank (Kangasniemi & Pirttilä, 2022). However, the e-voucher subsidisation program of ACDP has not reached its full potential, due to low financial capacity of farmers, most of whom are illiterate and cannot internalise an e-based program, which suffers from poor connectivity and weak governance among farmer institutions. Outcome: The subsidy program has clear design and implementation modalities and has yielded some good results, but there are some very weak aspects of implementation, which are compromising improved outcomes.
11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement In The Sector)	3	The market is fully liberalized, but the government is also implementing a subsidy program alongside the private sector. There is high market concentration (CR4 = 65%); competition between importers and Hubs (15 – 20) weakens the market, and

		a thin agro-dealer network (3000 registered) has resulted in a weak marketing system for small holder farmers with high margins.
Total Score	**25***	
Typology	**Typology II**	

Note: *Although Uganda scored 23, it is in Typology II, because the score was artificially boosted by indicator 9, which has a score of 4 because there are no forex restrictions in Uganda. But the majority of the other indicators had a score of 2, which places Uganda squarely in Typology II.

Table 12: Zambia

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	2	No Fertilizer Policy Agriculture (Fertilizers and Feed) Act Cap 226. Agriculture (Fertilizers) Regulations, S.I 476 of 1969 The Act and Regulations are outdated.
2. Dedicated Fertilizer Authority	1	There is no specialized dedicated fertilizer regulatory authority. Under the Act, the Registering Officer in Zambia is the Zambian Agriculture Research Institute (ZARI) of the Ministry of Agriculture. Various authorities regulate the fertilizer industry: ZARI is responsible for quality control of fertilizer and registration and licensing of manufacturers of fertilizers under the amended Agriculture (Fertilizer and Feed Act of 1994); the Zambia Environmental Management Agency (ZEMA) handles registration and licensing of chemical including fertilizers and pesticides *(products)* under the Environmental Management Act of 2012; the Zambia Bureau of Standards (ZABS) develops fertilizer standards under the Standards Act of 2017; and the Zambia Compulsory Standards Agency (ZCSA) enforces compulsory standards under the Compulsory Standards Act of 2017. Currently the enforcement of rules governing the importation, exportation, production, and distribution of fertilizer is the responsibility of several fragmented regulatory bodies and government ministries, such as the ZABS, ZEMA, ZSA, Competition and Consumer Protection Commission, Zambia Metrology Agency, Patent and Company Registration Agency, Ministry of Commerce Trade and Industry, MoA, and Ministry of Labour, among others.
3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy	3	ZBS has set quality standards for fertilizer blends and is in the process of developing standards on organic fertilizers, manure and bio-fertilizers. The fertilizer regulations include rules on organic fertilizer sampling, analysis, minimum nutrient levels.

Metal/Contaminant Levels, etc.)		
4. Fertilizer Quality Rules on Packaging and Labelling	2	There are no rules on packaging and labelling under the fertilizer law and regulations. The fertilizer standards on blends by ZBS include rules on fertilizer packaging, labelling and marking.
5. Quality Assurance Approaches On Product Registration	1	No registration of fertilizer products is required, yet there are also no rules on labelling of fertilizer in the Act or Regulations. Essentially, there are neither rules on registration nor a truth-in-labelling system, which has a negative impact on quality assurance. Zambia could register its fertilizers and provide a list of registered fertilizers in order to be aligned with other countries in the region and facilitate harmonization; however, it could also follow truth in labelling if a system is put in place.
6. Quality Assurance Approaches on Facility and Dealer Registration	2	Fertilizer plants have to be registered prior to operation by the registering officer appointed by the minister responsible for agriculture. Dealers are not required to be registered. This would be a good regulatory approach where there is a strong dedicated regulatory authority with effective oversight of the market and actors' practices. With multiple fragmented regulatory authorities with weak capacity in the fertilizer industry, absence of rules on who can engage in the industry could be detrimental to its development.
7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes and Duties (VAT, Customs Fees, etc.) Import License/Permits and Licenses)	3	The value added tax on all fertilizer imports, regardless of origin, is zero/exempt. Requirements to comply with multiple laws and regulatory bodies' requirements is a main barrier to trade. For instance, at the border of entry into the country, the imported fertilizer or fertilizer raw materials is inspected for: (i) quality by the Zambia Compulsory Standards Agency (ZCSA); (ii) environmental requirement compliance by the Zambia Environmental Management Agency (ZEMA); and compliance for weight by the Zambia Metrology Agency (ZMA).

8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	3	Appeals are handled by the minister responsible for agriculture. The Fertilizer Act and Regulations describe various offences, with any found in violation liable for a fine not exceeding three hundred penalty units (approximately USD 300) or imprisonment for a term not exceeding three months, or both; in the case of a second or any subsequent offence, a fine not exceeding seven hundred and fifty penalty units (approximately USD 750) applies or imprisonment for a term of six months, or both. There are, however, implementation challenges associated with limited resources.
9. Access to Finance and Availability of Foreign Currency for Fertilizer Importation	4	There are no restrictions on foreign exchange in Zambia
10. Rules on Fertilizer Subsidies	2	The government-supported subsidy, the Famer Input Support Programme, accounts for half of the national fertiliser market. The programme has been criticised for crowding out private sector investments, as well as for poor targeting and implementation. There were also reports of delay by the government to pay agro-dealers. Therefore, the focus should be on implementing smart, targeted subsidies for a limited time with a clear exit strategy to ensure that the design and implementation of these programs does not crowd out the private sector
11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement in the Sector)	3	Private sector presence in the fertilizer market is well established. By 2020, there were twelve fertilizer companies operational in Zambia, five of them were fertilizer manufacturing and/blending companies, while the remaining seven were importers of fertilizer. Since 2000, Zambia has, under its Agricultural Policy, pursued a liberalized fertilizer market that is market-led, competitive, efficient, transparent, and private sector-driven, which included free entry of as many fertilizer traders as was feasible and availability of information on fertilizer prices and its availability. Despite these reforms, government input subsidies (particularly the Fertilizer Support Programme (FSP)/FISP22)

		have continued to dominate in the fertilizer sub-sector, with over 65% of the total fertilizer consumed in Zambia under the FISP programme.
Total	**26**	
Typology	**Typology III:**	

Table 13: Zimbabwe

Indicators	Score	Rationale for the Score
1. Fertilizer Policy, Law and Regulations	2	No Fertilizer Policy Fertilizers, Farm Feeds and Remedies Act [Chapter 18:12], Act No. 21 of 1952 as amended last by Act No. 22 of 2001. No fertilizer regulations
2. Dedicated Fertilizer Authority	1	There is no specialized dedicated fertilizer regulatory authority. The Agricultural Research and Innovation Directorate of the Ministry of Lands, Agriculture, Fisheries, Water and Rural Resettlement is responsible for exercising oversight of the fertilizer industry.
3. Fertilizer Quality Standards (Rules on Inspection, Sampling and Analysis, and Technical Specifications Such as Nutrient Levels, Safe Heavy Metal/Contaminant Levels, etc.)	2	Fertilizer standards exist but are comprised of nutrient content specifications only. However, Zimbabwe is revising its framework for fertiliser standards. The Statutory Instrument on Fertiliser Regulations of 2014 (still in draft form) gives the required specifications for common fertilisers used in the country. Inspectors from the Farm Feeds Regulation Institute measure and assess the quality compliance of the products manufactured or imported for sale. The Standard Association of Zimbabwe, with participation of all stakeholders, including the private sector, draws up standards for various fertilisers. These standards follow the International Organization for Standardization (ISO) protocol format. However, these standards are voluntary and there are no penalties for non-compliance. Rules exist on fertilizer sampling, analysis, and testing.
4. Fertilizer Quality Rules on Packaging and Labelling	1	No legal framework is currently in place for packaging and labelling of fertilizer. The Act provides for fertilizer to be packaged and labelled according to rules prescribed under regulations, but regulations are not currently in place.
5. Quality Assurance Approaches on Product Registration	4	Fertilizers must be registered. Product registration is issued based on evidence of registration of the fertilizers in the country of origin. A certificate of registration for each fertilizer type, which includes the results of the nutrient analysis of the fertilizer, must be submitted. Samples are sent

		to Chemistry and Soils Institute Laboratory for Analysis. If the fertilizer analysis result conforms to the Zimbabwean standard, it is registered. No efficacy trials are required. Registration is valid for one year.
6. Quality Assurance Approaches on Facility and Dealer Registration	1	No legal framework in place for facility and dealer registration.
7. Rules on Cross-Border Trade Requirements (Fertilizer Tariff and Other Taxes and Duties (VAT, Customs Fees, etc) Import License/Permits and Licenses)	4	VAT on all fertilizer imports, regardless of origin, is zero/not applied. A rebate of other fees is granted to a registered manufacturer of fertilizer who imports fertilizer (Customs and Excise (Fertilizer Manufacturers') (Rebate) Regulations, 2021).
8. Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)	2	Appeals against decisions on registrations are made to the Minister. The Act makes no provision for lodging appeals with regard to other administrative decisions made under the Act, including no procedures for lodging an appeal, including the mode, time, and cost. While the Act provides for these to be described under regulations, such regulations are not in place. The Act stipulates various offences one may be punished for in the case of a violation. Offences include sale of unregistered fertilizer; improper packaging; not meeting the composition, efficacy, and purity specifications described during registration; breach of confidentiality; and obstruction of a public officer, among others. The penalties range between KWL1,000 (approximately USD 4) and KWL 60,000 (approximately USD180, or/and imprisonment between one month to one year.
9. Access to Finance and Availability of Foreign Currency for Fertilizer Importation	1	There is limited access to foreign currency, which has affected both domestic fertilizer production and importation.
10. Rules on Fertilizer Subsidies	2	The fertilizer market is dominated by government subsidy programs, which account for approximately 70% of the market. Under these programs, the government procures fertilizers and distributes them to farmers directly. Commercial distribution to farmers accounts for 30% of the market and is mainly to large-scale estates.

11. Market Inclusion (Market Dominated by Few Actors, Including Heavy State Involvement in the Sector)	2	Zimbabwe has 14 manufacturers but a very weak distribution network; the market is dominated by the government, with 70% of the fertilizer imported under the government fertilizer programs. Supply chains operating in the country include features of both private-sector-based competitive markets and SOE-managed or directed distribution systems.
Total	**22**	
Typology	**Typology II**	

4.2 Prioritization matrix of the policy indicators

Based on the assessment and score attained above, the policy indicators are ranked in order of priority below, by country

	Very High Priority – Score 1
	High Priority – Score 2
	Priority – Score 3
	Low Priority – Score 4

Table 14: Democratic Republic of Congo Policy Prioritization

S/N	Policy Indicators	Very high priority (1)	High priority (2)	Priority (3)	Low Priority (4)
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 15: Ghana Policy Prioritization

S/N	Policy Indicators	Very high priority (1)	High priority (2)	Priority (3)	Low Priority (4)
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 16: Kenya Policy Prioritization

S/N	Policy Indicators	Very high priority (1)	High priority (2)	Priority (3)	Low Priority (4)
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 17: Malawi Policy Prioritization

S/N	Policy Indicators	Very high priority (1)	High priority (2)	Priority (3)	Low Priority (4)
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 18: Mozambique Policy Prioritization

S/N	Policy Indicators	Very high priority	High priority	Priority	Low Priority
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 19: Namibia Policy Prioritization

S/N	Policy Indicators	Very high priority	High priority	Priority	Low Priority
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 20: Nigeria Policy Prioritization

S/N	Policy Indicators	Very high priority (1)	High priority (2)	Priority (3)	Low Priority (4)
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 21: Senegal Policy Prioritization

S/N	Policy Indicators	Very high priority	High priority	Priority	Low Priority
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 22: Tanzania Policy Prioritization

S/N	Policy Indicators	Very high priority (1)	High priority (2)	Priority (3)	Low Priority (4)
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 23: Uganda Policy Prioritization

S/N	Policy Indicators	Very high priority	High priority	Priority	Low Priority
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 24: Zambia Policy Prioritization

S/N	Policy Indicators	Very high priority (1)	High priority (2)	Priority (3)	Low Priority (4)
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

Table 25: Zimbabwe Policy Prioritization

S/N	Policy Indicators	Very high priority (1)	High priority (2)	Priority (3)	Low Priority (4)
1	Fertilizer Policy, Act and Regulations				
2	Dedicated Fertilizer Authority				
3	Fertilizer Quality: Standards (rules on inspection, sampling and analysis, and technical specifications such as nutrient levels, safe heavy metal/contaminant levels, etc.)				
4	Fertilizer Quality: Packaging and Labelling Rules				
5	Quality Assurance Approaches (product registration)				
6	Quality Assurance Approaches (facility and dealer registration)				
7	Cross-border trade requirements (Fertilizer tariff and other taxes and duties (VAT, customs fees, etc) import license/permits and licenses)				
8	Rules on Enforcement and Seeking Redress (Fines, Penalties, and Appeals)				
9	Access to Finance and Availability of Foreign Currency for Fertilizer Importation				
10	Fertilizer Subsidies				
11	Market inclusion (market dominated by few actors, including heavy state involvement in the sector)				

5 Typology-Based Fertilizer Development Programs

This section presents four typology-based fertilizer programs comprised of policy interventions countries can introduce to move from one typology to the next one, that is, to more developed and more enabling policy and regulatory environments for their fertilizer markets. The majority of policy and regulatory systems in the study are in Typology II (5 countries), three are in Typology III and IV; only one is in Typology I, DRC which is basically an undeveloped market (Table 26).

Table 26: Typologies of Policy and Regulatory Frameworks and Corresponding Countries

Typology	Countries
Typology I: Inchoate or just begun and so not fully formed or developed, rudimentary. Characterized by: absence of a policy and regulatory framework, small fertilizer market of < 50,000 tons, where the government is the main importer and distributor, there are maximum 1 – 2 importers and no distribution network A country under Typology I is at *the rudimentary stage of development* vis-à-vis its policy and regulatory framework.	DRC
Typology II: The policy and regulatory framework is nascent or just coming into existence and beginning to show signs of future potential. Characterized by: a fertilizer policy, no act or regulations, small fertilizer market of about 50,000 tons, less than 5 importers and thin distribution network A country under Typology II is at the *nascent stage* of development vis-à-vis its policy and regulatory framework.	Zimbabwe, Uganda, Namibia Mozambique Senegal
Typology III: The policy and regulatory framework is established and growing. Characterized by: a fertilizer policy, act and regulations, a fertilizer market of more than 100,000 tons, featuring at least 10 importers and > 30 Hubs and > 2000 agrodealers A country under Typology III is at the growth *stage* vis-à-vis its policy and regulatory framework.	Zambia, Ghana Malawi
Typology IV: The policy and regulatory framework is mature and well-established and serves a mature market. Characterized by: a fertilizer policy, act and regulations, a regulatory authority or strong self-regulation by the private sector, a fertilizer market of more than 300,000 tons, featuring at least 20 importers and > 50 Hubs and > 3000 agrodealers. A country under Typology IV is at the *mature stage* vis-à-vis its policy and regulatory framework.	Tanzania, Nigeria, Kenya

5.1 Typology I – Interventions

In this scenario for Typology I (see Table 27), the following conditions prevail: the policy and regulatory framework is basically non-existent; the market is very rudimentary featuring a small market size (under 50,000 tons imported annually); the government is the main importer and supplier for small-holder farmers; and the private sector is nonexistent or very inchoate characterized by 1-2 importers and no independent distribution network. Furthermore, the majority of fertilizer is mainly imported directly by estates growing industrial crops like sugarcane, farmer knowledge about fertilizer use and its benefits is non-existent, infrastructure is absent or very limited, and the overall environment is poor/unfavourable for market development. In this situation, there is no incentive for private investment in fertilizer importation and distribution to smallholder farmers or for farmer use of fertilizers. The country that falls under this example in the study is the DRC, a country that is at the rudimentary stage of development vis-à-vis its policy and regulatory framework.

The priority policy and regulatory interventions should focus on stimulating demand for fertilizer among farmers. These include:

1) *Fertilizer Subsidies* – this is a high priority as the key policy tool to grow the market. It should be a universal subsidy with three key components: a) soil nutrient testing to establish nutrient needs in the main agroecological zones, fertilizer trials and fertilizer recommendations for the main food and cash crops to guide the types of fertilizer that should be included in the program, and importation of the fertilizer products that match these recommendations; b) extension to teach farmers the correct way to use fertilizers and the benefits of fertilizer use; and c) the program should be designed to grow the distribution network by using existing general retailers who are located close to the village level to distribute the subsidized fertilizer and collect a commission which they can use to begin to buy stock. They should be provided with marketing, business management and technical training to begin to develop a critical mass of agrodealers who will eventually buy and sell fertilizer and other inputs to farmers i.e., last mile delivery.

2) *Fertilizer Policy* - the second priority policy intervention is to develop a fertilizer policy that provides a vision and guidance for the sector. As the market develops and fertilizers and other modern inputs become more well-known to farmers, the market begins to grow towards a viable competitive market, and opportunities for private sector investment increase, there will be an increasing need for political assurance by the government of its commitment to increasing fertilizer use and clarity on the role of the private sector. Hence the second priority intervention is the development of a clear fertilizer policy that elaborates the government's vision for fertilizer and its overall role in achieving the country's agricultural objectives. The key components of a fertilizer policy are covered in Box 1 using the example of DRC.

This stage is the most resource demanding and will require sufficient time to generate sufficient effective demand from smallholder farmers that will then justify developing regulations to govern the market and facilitate movement to the next stage or typology. It is reasonable to expect that it will take at least 5 years to establish sufficient

willingness and ability by smallholder farmers to buy fertilizers and other complementary inputs such as hybrid seeds and, hence, provide an incentive for independent private sector investment in the distribution network, which would in turn justify the development of regulations to govern the market. This is the "tipping point" at which the country will move into Typology II.

Box 1. Key Policy Intervention for DRC (Typology I Country) – Develop a Fertilizer Policy

Develop a fertilizer policy to provide a vision of a well-developed fertilizer sub-sector for the country. This could be a standalone policy or it could be embedded in the larger national agricultural policy. The key is to have a fertilizer policy in place that includes the following components: a) provides guidance on the technical issues to be included in the fertilizer act and how they should be addressed (specifically, issues related to fertilizer quality including fertilizer standards, fertilizer registration, nutrient content, etc.); b) provides guidance on the institutional issues to be included in the fertilizer act and how they should be addressed, mainly how to organize and fund the human and financial resources required to enforce regulations; and c) provides guidance on issues that should be included in the fertilizer policy that are not directly related to the fertilizer act. Issues include: (i) provision of an economic rationale for the increased use of fertilizers in the country i.e., provide a clear statement on why, from an economic standpoint, increased efficient use of fertilizer is advantageous for the region; (ii) government agricultural extension services related to fertilizer use; (iii) the role of output markets in increasing fertilizer use; (iv) improved financing for fertilizer supply and distribution; (v) the role and design of fertilizer subsidy programs; (vi) research on soil fertility management; and (vii) the ideal fertilizer production and blending approach. The policy should also define the current and future roles of government, the private sector, and other actors and stakeholders in the fertilizer sub-sector.

Table 27: Action Matrix for Policy and Regulatory System Development for Typology I

Policy and Regulatory Intervention	Objective	Key Activities and Responsible Actors			
		Government	**Private Sector**	**Development Partners**	**Donors**
1) Design and implement a universal fertilizer subsidy program with three key components: a) Soil nutrient testing; b) Extension; c) Development of an agro dealers network	Create a critical mass of effective demand for fertilizers among smallholder farmers	Collaborate with development partners to design and implement a smart subsidy program with the three key components	Participate in the distribution of subsidized fertilizers Participate in the training required for the development of the agrodealers network	Provide support to the government to conduct agricultural input market development and use it to inform the design and implementation of the fertilizer subsidy program. Support government to develop the three key components of the subsidy program	Provide funding for the subsidy program Donate the appropriate fertilizers that match the nutrient needs
2) Develop a Fertilizer Policy	Provide a vision for the sector	Develop a comprehensive fertilizer policy that is appropriate for the level of market development, institutions and infrastructure. This should include key components (Box 1)	Provide input to the fertilizer policy	Provide technical assistance for the fertilizer policy	Provide support to develop a comprehensive fertilizer policy Provide assistance for fertilizer policy

		Publicize consistent government commitment to increasing fertilizer use and growing a private sector led fertilizer market			

5.2 Typology II – Interventions

In this scenario for Typology II (see Table 28), the policy and regulatory framework is nascent or just coming into existence and beginning to show signs of future potential. This typology is characterized by: a fertilizer policy, no act or regulations, a small fertilizer market of about 50,000 tons, and fewer than 5 importers and a thin distribution network. A country under **Typology II** is at the ***nascent stage*** of development vis-à-vis its policy and regulatory framework. High on the priority agenda is the need for the countries in typology II to develop their fertilizer regulatory frameworks. Emphasis should also be placed on fertilizer quality standards and the introduction of the truth in labelling concept. Fertilizer subsidies remain critical in stimulating fertilizer demand, but they should be smart with a clear exit strategy. In some cases, fertilizer trade tariffs remain problematic in developing the fertilizer market. For instance, in Mozambique, import duties are still charged on fertilizer micronutrients, highlighting a need for reform.

The priority policy and regulatory interventions should focus on stimulating demand for fertilizer among farmers. These include:

1) *Continue Developing Fertilizer Policy Regulatory Frameworks*- as a priority policy intervention, focus should be on continuing to develop fertilizer regulatory frameworks of the country, which include the fertilizer policy, regulations and laws or acts. As the market develops and fertilizers and other modern inputs become more well-known to farmers, there is increased opportunity for private sector investment. For this to happen, there has to be political will by the government to commit to increasing fertilizer use and create a clear role for the private sector.

2) *Design and Implement Targeted Subsidies.* One way of achieving this is through the use of commercial estates in the distribution of subsidized fertilizer earmarked for staple crops. As a way of developing the fertilizer market, use of commercial estates to distribute subsidized fertilizer earmarked for cereal crops will improve fertilizer use among smallholder farmers. In addition, soil mapping and development of tailor made fertilizer blends should be part of the subsidy scheme.

3) *Develop and Strengthen Agrodealer Networks and Develop and Strengthen the National Fertilizer Association* to enable easy access to fertilizer by farmers.

Table 28: Action Matrix for Policy and Regulatory System Development for Typology II

Policy and Regulatory Intervention	Objective	Key Activities and Responsible Actors			
		Government	**Private Sector**	**Development Partners**	**Donors**
1) Continue Developing Fertilizer Policy Regulatory frameworks	Provide a vision for the sector	Provide inputs to the fertilizer policy, regulations and acts	Provide technical assistance to fertilizer policy, regulations and acts	Provide assistance for the comprehensive and inclusive development of fertilizer policy, regulations and acts	Provide the necessary funding mechanism
2) Design and implement targeted subsidies. Use commercial estates in the distribution of subsidized subsidies earmarked for staple crop	Create a critical mass of effective demand for fertilizers among smallholder farmers	Collaborate with development partners to design and implement the subsidy program with the three key components	Participate in the distribution of subsidized fertilizers Participate in the training required for the development of the agro dealers network	Provide support to the government to conduct agricultural input market development and use it to inform the design and implementation of the fertilizer subsidy program. Support government to develop the three key components of the subsidy program	Provide funding for the subsidy program Donate the appropriate fertilizers that match the nutrient needs
3) Develop and strengthen	Improving efficiencies in	Provision for the regulations around	Participate in the distribution of	Provision of technical support to	Provide the necessary funding mechanism

agrodealer networks **Develop and strengthen national fertilizer association**	fertilizer distribution	agro dealers registration and accreditation Provision for the regulations around agro dealers participation in fertilizer subsidy schemes.	subsidized fertilizers	agro dealers and blenders in the development of soil and crop specific fertilizer products as well as handling them	

5.3 Typology III – Interventions

In this scenario for Typology III (see Table 29), the following conditions prevail: the policy and regulatory framework is established and growing. This typology is characterized by: a fertilizer policy, act, and regulations; a fertilizer market of more than 100,000 tons; and a market comprised of at least 10 importers, > 30 Hubs and > 2000 agrodealers. Due to the established and growing policy and regulatory framework and institutional support, there is a strong private sector presence in the market. The use of mineral fertilizers in conjunction with improved seeds and pesticides is more and more widespread among smallholder farmers, and both food crops, such as maize, and cash crops, such as coffee and tea, are commercial crops. Nevertheless, there is still heavy government involvement in the market, particularly in the form of fertilizer subsidy programs, hence procurement/production and distribution are carried out by both the public and private sectors. Despite the presence of clear regulations, enforcement is weak and/or inconsistent due to lack of resources (both financial and human). The countries that fall under this example in the study are Malawi, Ghana, and Zambia.

The priority policy and regulatory interventions should focus on increasing private sector investment and engagement. This will require revising the design and implementation of the existing fertilizer subsidy programs to make them more private sector friendly and the establishment of dedicated fertilizer authorities with sufficient resources to enforce the regulations. Specifically:

1) *Revise Fertilizer Subsidy Programs to be More Inclusive* – while the subsidy programs in the three countries have different design and implementation modalities, they have in common the exclusion of the private sector from distribution; the private sector is only included in the importation of fertilizer for the subsidy program. Furthermore, in Ghana the government confer with importers to set the subsidized price but excludes hubs and agrodealers. This creates a very uncertain trading environment and has a negative impact on the growth and stability of the private fertilizer businesses. There is a need for government to sit down with the private firms involved in fertilizer importation and distribution in each country to review and revise the extant subsidy programs with a view to minimizing their negative impact on the private sector and find ways in which the subsidy program could be used to strengthen private sector actors, particularly at the hub and agrodealer levels.

2) *Establish Dedicated, Well-resourced Fertilizer Authorities* - the second priority policy intervention is to establish dedicated fertilizer authorities with the necessary human and financial resources to do their work effectively. This is particularly important for quality control, which is an issue in all three countries as well as fertilizer product registration. A private sector dominated fertilizer market (at least > 70% of fertilizer is imported and distributed by the private sector) and heavy self-regulation by the private sector will be the "tipping points" at which the country will move to Typology 4.

Table 29: Action Matrix for Policy and Regulatory System Development for Typology III

Policy and Regulatory Intervention	Objective	Key Activities and Responsible Actors			
		Government	**Private Sector**	**Development Partners**	**Donors**
1) Revise fertilizer subsidy programs to make them more inclusive	Establish fertilizer subsidy programs that strengthen instead of weaken the private actors in the fertilizer value chain	Collaborate with development partners to revise the subsidy programs	Actively participate in the revision of the subsidy programs Participate in the training required for participation in the revised subsidy programs	Provide support to the government to conduct an assessment of the existing subsidy programs and recommend revisions that will Involve the private sector at all levels of the fertilizer value chain	Provide funding for the subsidy program
2) Establish dedicated, well-resourced fertilizer authorities	A well-resourced, fully functioning regulatory body that implements quality control measures at all levels of the value chain and maintains a list of registered fertilizers that are traded in the country	Provide the regulatory authority with adequate resources and capacity to perform its roles. Establish laws and regulations for private sector associations	Establish fertilizer associations and introduce measures to support quality control for example, a) introduce certification schemes that encourage members to sell quality inputs; do	Provide technical assistance to develop sampling, testing and enforcement capabilities Encourage and facilitate the establishment/strengthening of the fertilizer trade and agro dealer associations. Facilitate self-regulation of the industry through dealer associations and a system of accreditation.	Provide funding the establish the regulatory authorities

		Publicize government commitment to effective regulation of the fertilizer market and the importance of the enforcement measures for the provision of quality fertilizers on the market	spot checks on quality of fertilizers being sold by members; c) Encourage members to buy from registered companies and uphold ethical business practices; etc.		

5.4 Typology IV– Interventions

In this scenario for Typology IV (see Table 30), The policy and regulatory framework is mature and well-established and serves a mature market. It is characterized by a fertilizer policy, act and regulations; a regulatory authority or strong self-regulation by the private sector; and a fertilizer market of more than 300,000 tons, with at least 20 importers, > 50 Hubs, and > 3000 agro dealers. A country under typology IV is at the mature stage vis-à-vis its policy and regulatory framework. Typically, the role of government in these markets is limited to the provision of a conducive business environment. The private sector is also well organized, and there is more self-regulation through well-functioning fertilizer associations and agrodealers' associations. Nevertheless, fertilizer financing remains a limiting factor, and thus improving access to finance is a priority. In addition, due to cyclical crisis of rise in costs of living, most governments tend to use fertilizer subsidies to reduce the cost of food. In most cases these subsidies have been reported to crowd out private sector investments in the fertilizer sector.

The priority policy and regulatory interventions should focus on sustaining demand for fertilizer among farmers. These include:

1) *Innovative Finance* – in order to maintain and sustain the level of fertilizer use. In addition, the market should be more focused on fertilizer use efficient.
2) *Design and Implementation of Smart Subsidies.*
3) *Establishment of well-organized and sufficiently resourced fertilizer trade and agrodealer associations*

Table 30: Action Matrix for Policy and Regulatory System Development for Typology IV

Policy and Regulatory Intervention	Objective	Key Activities and Responsible Actors			
		Government	Private Sector	Development Partners	Donors
1) Introduce innovative fertilizer financing mechanism	Improve quality fertilizer accessibility and availability with the overall aim of increasing fertilizer use at the farm level	Collaboration with development partners and donors to establish credit guarantee facilities with banks and suppliers	Participate in credit guarantee scheme	Provision of the technical assistance of innovative fertilizer financing mechanisms	Provide the necessary funding mechanism
2) Design and implement Smart subsidies	Maintain critical mass of effective demand for fertilizers among smallholder farmers	Collaborate with development partners to design and implement the subsidy programme the three key components	Participate in the distribution of subsidized fertilizers Participate in the training required for the development of the agrodealers network	Provide support to the government to conduct agricultural input market development and use it to inform the design and implementation of the fertilizer subsidy program.	Provide funding for the subsidy program Donate the appropriate fertilizers that match the nutrient needs
3) Establishment of well-organized and sufficiently	Improving regulatory	Provisions for the establishment/strengthening of bone fide fertilizer	Establish/strengthen fertilizer trade and agrodealer	Provision of technical support	Provide the necessary

resourced fertilizer trade and agrodealer associations	efficiencies in fertilizer sector	trade and agrodealer associations	associations and introduce measures to support self-regulation	to fertilizer authorities.	funding mechanism

6 Conclusions and Recommendations

Policy, legal, and regulatory frameworks in ASoS range from non-existent to comprehensive. Governments and their partners need to understand where they fall on this spectrum and what steps they can take to strengthen the policy and regulatory environment and hence improve market performances. Therefore, this document provides a strategic framework that national governments, the private sector, development partners, donors, and other interested stakeholders can use to determine where they fall in the spectrum of typologies of policy, legal, and regulatory frameworks and what actions they can take to establish a more conducive policy and regulatory environment for fertilizer market systems in ASoS. It promotes understanding between the status of the fertilizer market and the policy, legal, and regulatory environment; provides a methodology countries can use to assess where they falls on the spectrum of the existing policy, legal, and regulatory systems in ASoOS; and provides a suite of interventions that countries can use to improve their policy, legal, and regulatory systems in order to establish more sustainable, effective and efficient fertilizer markets that meet the needs of the farming community in ASoS.

The premise is that while policy and regulatory systems do not readily lend themselves to the linear stage of development model, articulating the evolutionary process into stages or typologies is useful to understand the most appropriate interventions that will help improve the efficiency and effectiveness of the policies and regulations governing the fertilizer business and trade of a country with a particular set of policy and market characteristics.

However, while this paper addresses an important gap, two points are worth emphasizing.

First, it is important to note that the interventions elaborated in the previous section are not a magic bullet for the establishment of a more conducive enabling environment for fertilizer market development in Africa. In using this document to develop action plans to strengthen the enabling environment for fertilizer markets, it will be critical for countries to take into account the particularities of their own situation and adjust the interventions suggested by the action matrix for their typology accordingly.

Second, the interventions delineate clear roles for the government and private sector, as well as donors and development partners, in the implementation of the suggested interventions. However, the level of involvement of the public and private sector varies with the stage of development of the policy and regulatory framework. Interventions by the government are higher during the earlier stages of development (Typologies I and II) while the private sector features more prominently as the policy and regulatory

frameworks move into the growth and maturity stages (Typology III and IV, respectively). Nevertheless, it is important to introduce the role of the private sector as soon as possible in the interest of building a sustainable fertilizer market. That is, while some functions may be efficiently performed by the private sector in more developed markets e.g., self-regulation for quality control, this does not automatically mean they should only be introduced at these later stages. If there is an opportunity to integrate these functions earlier, governments should pursue this path.

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