Enabling Agricultural Trade

Building an Enabling Environment for Fertilizer Sector Growth

USAID-EAT Project | African Fertilizer and Agribusiness Partnership

The appropriate use of fertilizer is proven to increase yields and improve productivity. As a result, governments around the world have made improved access to and utilization of fertilizer a top priority in their agriculture and rural development strategies. Despite public policies and investment intended to promote fertilizer use, the usage rate remains low in many developing countries.

Fertilizer companies, particularly in developing countries, face a number of supply- and demand-side constraints to increasing the profitable use of fertilizer: Fertilizer is expensive and is traded in large volumes on low margins. Suppliers are exposed to substantial risks in predicting the timing and amount of fertilizer demand in a given season, while navigating volatile global commodity prices and managing cash flows to buy and sell fertilizer on credit.

In many developing countries, particularly in Sub-Saharan Africa and Central Asia, this business model is challenged by small, fragmented markets and low fertilizer demand. Farmers may lack access to fertilizer sellers or be unable to finance the purchase. Demand for fertilizer is further hampered by inconsistent product quality, lack of technical know-how for proper application, and weak or volatile output markets in which farmers can sell their produce.

Many governments have addressed these constraints by taking an active role in the fertilizer market with the intent to expand access to fertilizer or meet food security objectives, often through subsidies or broader price controls. Evidence from diverse economies, however, shows that these interventions tend to be expensive, often fail to reach the program’s target beneficiaries, and frequently harm private fertilizer companies. While acknowledging that successful fertilizer policy requires a two-pronged approach to address both supply- and demand-side weaknesses, this paper focuses primarily on the constraints to the supply of fertilizer. The central tenet of this paper is that government policies and investments must support – not control – a dynamic, private sector-led fertilizer industry to sustainably increase fertilizer use.
This paper is organized around three guiding principles. First, stable and effective laws and regulations will enhance fertilizer quality and availability. Second, governments should move away from direct participation in the fertilizer market and towards public policies and investments that support the development of a private fertilizer industry, expanded output markets for increased production, and better farmer education. Third, regional harmonization of fertilizer laws and regulations can achieve economies of scale in fertilizer trade, manufacture, research and development, and testing that will drive down fertilizer costs.

**PRINCIPLE 1: The legal and regulatory framework should create market conditions necessary to foster a competitive private fertilizer sector.**

Government fertilizer policy can encourage the private sector to meet the needs of agricultural producers by establishing a clear and efficient process for licensing agrodealers, registering products, and enforcing fertilizer quality standards. Poorly defined or unenforced standards can lead to abuses such as improper or misleading labeling and underweight bags, which increase investment risk for farmers and may dissuade them from using fertilizer in the future. Experience from countries such as Thailand that have a large and dynamic fertilizer sector suggests that private companies, when supported by appropriate regulatory oversight, will compete to retain customers by building brands based on quality and reliability. In Thailand, private companies sit on the Ministry of Agriculture's Fertilizer Committee and help set licensing and trade regulations. Such collaboration requires a strong fertilizer law, backed by a clear assignment of regulatory roles at every stage of fertilizer production and distribution, extending to the local level.

**ESTABLISH A DEDICATED FERTILIZER LAW.**

An effective fertilizer law is a standalone law that sets clear expectations for fertilizer quality in order to mitigate investment risks faced by both fertilizer businesses and farmers. Broad country experience suggests that ‘truth-in-labeling’ guidelines that define rules for the packaging, branding, and labeling of fertilizer products inform consumers of the attributes and proper application of the product. The framework for monitoring product quality can then be established by outlining rules for the accreditation of laboratories, specifying the sampling methodology to be used for fertilizer testing, and providing for third-party monitoring and certification of fertilizer quality. A strong fertilizer law contains basic requirements for the registration, licensing, shipment, and sale of fertilizer, but addresses the implementation of these procedures in the regulations where they are more easily amended. The law also facilitates access to new fertilizer compounds by permitting new products to enter the country after a straightforward registration process, rather than limiting acceptable fertilizer compounds to an approved list. Such restrictions limit companies’ ability to introduce new and better products as they become available. For example, in Ghana it can take up to seven years to approve a new fertilizer compound for cocoa.

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1. A common weakness in fertilizer legislation is to govern fertilizer along with other products such as animal foodstuffs or chemical products. Bangladesh’s Essential Commodities Act is not fertilizer-specific and can be interpreted to ban fertilizer storage (as perceived “hoarding”) in periods of shortage.
Establish a Clearly Defined Regulatory Body to Monitor and Enforce Standards.

A fertilizer law will be ineffective if the authorities responsible for implementing the law lack sufficient funding or clearly defined responsibilities. Many countries lack either the capacity or the mandate to properly enforce fertilizer regulations, or conversely over-regulate the industry. Fertilizer imports to Nigeria, for instance, are routinely delayed due to the requirement that all imports be held until laboratory testing confirms that the product conforms to the manufacturer’s claims. To effectively regulate the industry, the government should delegate oversight to a regulatory body with the capacity for enforcement backed by punitive action. Such capacity includes laboratories that are accessible, equipped with the staff and supplies to meet international standards for fertilizer testing, and that maintain a system for tracing adulterated products back to the source. Mauritius is a leader in this regard by giving inspectors the authority to seize and sample fertilizer if necessary and by criminalizing the sale of adulterated fertilizer. If a farmer believes that they have been sold a substandard product, they can submit a fertilizer sample for testing and initiate an investigation.

Eliminate Tariff Barriers to Fertilizer Trade.

Tariffs and taxes in many countries add significant costs to fertilizer trade. In the Economic Community of West African States (ECOWAS) region, although fertilizer is exempt from the Common External Tariff, some countries still charge an import duty. Fertilizer may also be subject to a value-added tax, such as the 20 percent VAT collected in Albania. Numerous other small levies, such as the “shipper and council” tax in Ghana and Mali, add administrative burdens and rent-seeking opportunities that can lead to costly delays in clearing fertilizer shipments at the port. Tariffs can even be used to prevent fertilizer trade, which may favor some participants over others. During fertilizer price spikes in 2008, China raised export tariffs to 135 percent to implement a de facto ban on fertilizer exports and has since maintained seasonal tariffs to restrict fertilizer exports during periods of peak domestic demand. While the export tariff may benefit Chinese farmers, it does so at the expense of Chinese fertilizer manufacturers and may affect global commodity prices. Governments should abolish tariffs and minimize taxes on fertilizer to allow companies to better predict the cost structure of fertilizer and keep prices low for farmers. At a minimum, bulk fertilizers and raw compounds for blending should be classified as duty-free imports.

Support a Competitive Private Sector That Promotes Free Entry and Trade.

Competition in the private sector drives efficiencies by reducing the cost and improving the timeliness of fertilizer delivery. Non-tariff trade barriers such as price controls, import quotas, and state-issued trading licenses limit competition by making it difficult for new firms to enter the market. In Zimbabwe, a permit must be obtained from the Ministry of Agriculture to import or export fertilizer, and the government has currently ceased issuing export permits under the Control of Goods Act as a means of implementing a general export ban on fertilizer. Even without such barriers, the structure of the fertilizer industry presents a barrier to entry for new firms. High financing costs and economies of scale in purchasing large quantities of fertilizer make the industry conducive to oligopolies, particularly in importing to small markets. By contrast, competition among firms decreases marketing margins and encourages firms to expand rural distribution networks. Governments that provide a level playing field for new firms to enter and trade in the market are those that avoid non-tariff trade barriers and other forms of direct intervention in the fertilizer market.

PRINCIPLE 2: Governments should move from market participation to supporting private sector development, strengthening output markets, and improving farmer education.

In a nascent fertilizer industry, there is often little private sector involvement. Beyond establishing a policy environment that is conducive to private sector investment, an important role of the government in the initial stages is to bridge the gap in agricultural research and development (R&D), farmer education, and market information and infrastructure that will make fertilizer use and increased crop production profitable. As the market grows and the private sector takes over many of these responsibilities, less support is required. In the initial stages, however, many governments react to an under-developed private sector by entering the market, such as through public sector procurement and distribution, supply-side subsidies, or voucher programs.

Government fertilizer programs tend to be costly and often fail to deliver fertilizer on time to farmers due to delays in budgetary approvals and funding shortfalls. Government procurement contracts commonly require importers to commit to a price well in advance of delivery to facilitate the budgetary approval process, while payments to importers can be delayed by six months or longer. The length and unpredictability of these delays, coupled with the large loans necessary to finance procurements, constrain firms’ ability to manage working capital. In Côte D’Ivoire, government-mandated subsidies of fertilizer for the cotton industry were not repaid to cotton companies for over two years. As of early 2010, the government owed more than $6 million to a major cotton producer, enough to threaten the company with bankruptcy.

Similarly, where the government controls wholesale fertilizer distribution through a government agency or parastatal, programs have frequently failed to deliver fertilizer to the intended beneficiaries and have at times diverted subsidized fertilizer into the open market, driving out existing private sector retailers who cannot compete with below-cost fertilizer. This can lead to the collapse of the agrodealer network, such as in Zimbabwe, where the government intervened in wholesaling and distribution of fertilizer through the Grain Marketing Board. In Nigeria, until 2010, fertilizer imports and procurement were dominated by the federal government. States undertook the distribution of federal government-sourced product and their own sourced product, but it is widely accepted that less than 10 percent of this fertilizer actually reached the targeted beneficiaries.

In the past decade, ‘smart’ subsidies have improved the probability of subsidized fertilizer reaching the targeted beneficiaries through the use of a targeting mechanism such as input vouchers or fertilizer-for-work programs. When implemented effectively, smart subsidies have increased demand for fertilizer and built capacity among agro-input dealers.1 In many cases, however, such interventions can quickly become expensive, lack exit strategies, and have multiple, conflicting objectives.2 Program design should support private sector participation in sourcing, supply, and distribution of fertilizers, and specify a clear exit plan.3 While a detailed discussion of subsidies and voucher plans falls outside the scope of this paper, the topic is well-covered in development literature.4

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1 One such example is the USAID/IFDC Kyrgyz Agro-Input Development Project. http://pdf.usaid.gov/pdf_docs/PDACM077.pdf
2 For more information and examples from subsidy programs in Malawi, Tanzania, Zimbabwe, and Ghana, see the transcript and presentation from USAID’s “Voucher Schemes for Enhanced Fertilizer Use: Lessons Learned and Policy Implications” seminar, Washington D.C., January 25, 2012.
3 To date, successful exit plans have only occurred on donor-funded or donor-implemented projects, where the subsidy ends when the funding runs out.
PHASE OUT GOVERNMENT CONTROL OF FERTILIZER PROCUREMENT AND DISTRIBUTION.

In countries with long-standing government procurement and distribution programs, the private sector has often been displaced by public sector activities in the fertilizer market and has been unable to respond immediately to the vacuum left by the withdrawal of government services. Distribution networks take time to develop because they rely heavily on market knowledge of local demand and soil conditions, and frequent policy changes further undermine the trust necessary for businesses to make long-term investments. In India, the government’s uncertain policy on supply-side subsidies and price controls for domestic urea manufacturing has hampered new investment and contributed to a 7 million metric ton shortfall in production. Overall, government programs should be phased out in a transparent, planned manner alongside complementary initiatives to help companies overcome constraints to operating a fertilizer business and to competing in international fertilizer markets.

Where governments have moved out of fertilizer procurement and distribution and focused instead on supporting private sector development, the private sector has thrived by building on competitive advantages and exploiting synergies in the supply chain. Brazil is a leading example, where government investments in agricultural research and extension through the Brazilian Agricultural Research Corporation (EMBRAPA) helped to stimulate demand for fertilizer. Commodity traders stepped in to fill the demand by optimizing transport logistics through importing fertilizer and back-loading crops and other freight. Traders also stimulated fertilizer demand by providing agro-inputs in return for crop liens and by creating market conditions for infrastructure investment in storage facilities and rural feeder roads. By selling inputs in return for next season’s harvest and building wide customer bases, companies create long-term demand for fertilizer in ways that spur growth across the entire agricultural sector.

IMPLEMENT CREDIT GUARANTEE SCHEMES TO IMPROVE ACCESS TO FINANCE.

Fertilizer businesses at all levels of the supply chain face enormous constraints to accessing loans due to high interest rates, prohibitive collateral requirements, and limited access to domestic financing. In Sub-Saharan Africa, an importer will commonly pay nominal interest rates of 20-30 percent and provide collateral of over 100 percent in order to obtain a letter of credit. Without affordable credit, businesses must purchase orders in small amounts and incur additional transport and labor costs from frequent trips to replenish supplies. In the short term, governments can mitigate the high cost of business finance by collaborating with local commercial banks to create credit guarantee funds. Under a credit guarantee program, the importer raises a portion of the funds needed for a letter of credit (20-30 percent), and the local bank provides the remainder as a loan (70-80 percent). The government, in turn, provides a guarantee for a portion of the loan in case of default, which lowers the interest rate charged to the importer. Such a scheme is already operating in Kenya and Ghana through partnership between AGRA and Standard Bank, as well as with four other local banks in Kenya. To date, AGRA’s financing programs have established credit guarantee funds in five African countries and leveraged $150 million in low-interest loans for smallholder farmers and agribusinesses.

PHASED STRUCTURAL CHANGE: IFDC IN BANGLADESH

Until 1978, the fertilizer sector in Bangladesh was controlled by a government parastatal – the Bangladesh Agricultural Development Corporation (BADC). The BADC procured and distributed approximately 720,000 tons of fertilizer per year via a network of 20,000 retailers who were licensed to sell at set prices and locations. Over the next fifteen years, the market was gradually privatized through the implementation of the International Fertilizer Development Center (IFDC) Fertilizer Distribution Improvement project (FDI-I and II), which included the following:

1) BADC halted retail sales and prices were deregulated, allowing private companies to enter the retail trade.

2) The private sector was allowed to bypass BADC depot centers and buy direct from factories and ports.

3) Fertilizer importation was privatized.

4) Commercial banks successfully extended loans to fertilizer importers and wholesalers through partial credit guarantees created by partnerships between banks and donors.

During the FDI project, fertilizer use increased at a compound growth rate of 8 percent per year. By the mid-1990s, farmers in Bangladesh used more than 2.5 million metric tons of fertilizer per year. As a result of this phased approach to government policy reform, businesses were able to build private distribution networks over time to fill the vacuum left by gradual government withdrawal.

BUILD PRIVATE SECTOR CAPACITY FOR SELF-REGULATION THROUGH ACTIVE AGRO-INPUT DEALER ASSOCIATIONS.

Private sector self-regulation in addition to government regulation can be a cost-effective and efficient means of ensuring high quality fertilizer products. Agro-input dealer associations typically support private sector development by providing technical knowledge to their members regarding different fertilizer products, fertilizer application, nutrient management, and market demand. Yet they can also play a leading role in the monitoring of fertilizer sold by their members. This system involves random testing of fertilizer and enforcement of penalties for any member businesses selling adulterated products. Australia is a successful example in this regard, where a sample of each fertilizer blend is retained for potential testing by a private sector body to ensure quality standards are maintained for the industry as a whole. Routine analysis and processes meet ISO standards, and the threat of litigation and brand degradation from product failures is sufficient to guarantee compliance. To build private sector capacity for self-regulation and reduce the time and cost of government oversight, the government body responsible for regulating fertilizer can provide training to the association to enable it to effectively monitor fertilizer quality.

INVEST IN MARKETING INFRASTRUCTURE.

Transport, after the cost of fertilizer, is the largest component in fertilizer farmgate price. Public investments in ports, roads, and rail networks reduce transport costs and can enable the private sector to expand into rural areas. Inadequate port infrastructure can result in berthing delays and demurrage costs due to inefficient customs clearance systems, limited bagging machinery, and insufficient trucking services available to transport bagged products from the dock. In Southeast Asia, short, efficient transport networks, access to deep water ports, and consistent availability of backhaul cargo provide a comparative advantage for fertilizer transport and trade. Efforts such as at Kenya’s Mombasa port to increase the number of berths and implement a single window customs system reduce the costs and delays incurred at the port. Beyond the port, fertilizer distribution is limited by the ability of retailers to reach remote areas where roads, particularly rural feeder roads, may be poor or nonexistent. These same roads serve as a critical link between farmers and output markets. Government investments in infrastructure should take into account both the channels for bringing fertilizer to farmers as well as for bringing farmers’ produce to market as a means to stimulate both the supply of and demand for fertilizer. GIS analysis has been used in Tanzania to map fertilizer transport costs within a country, and this data can be used to prioritize improvements to rural roads.

BUILD FARMER CAPACITY THROUGH PUBLIC RESEARCH AND DEVELOPMENT AND TARGETED EXTENSION SERVICES.

Fertilizer use alone does not increase crop yields; it must be used properly. Agricultural R&D and extension services are necessary to ensure that fertilizers have the correct formulation to meet local soil needs, are applied in the correct amount and at the optimal point in the planting cycle, and are used alongside complementary inputs such as improved

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11 The “CIF” price, which includes cost, insurance, and freight.
13 Marketing infrastructure such as price information networks, storage and processing facilities, and established grades and standards are also critical to stimulating fertilizer demand by giving farmers reliable access to markets for their goods and creating an incentive for farmers to increase production. While a detailed discussion of recommendations for improving farmer demand for fertilizer is outside the scope of this paper, these issues have been well covered in the literature. For more information, see Minot, N. and Hill, R.V. (2007). 2020 Focus Brief: Developing and Connecting Markets for Poor Farmers. Washington, D.C.: IFPRI.
Without proper application, fertilizer use can actually decrease profitability by creating a significant added cost without a corresponding increase in crop yields. Governments should fund agricultural R&D through a research institute or the national university system that develops new improved seed varieties, defines agricultural ‘best practices,’ and maps soil types and nutrient deficiencies. Agricultural research institutes or universities often play a supporting role in fertilizer regulation by providing testing services or conducting field trials on new fertilizer products. As the fertilizer market develops, private companies may begin to fund R&D and compete to innovate, and the role of public research decreases accordingly.

R&D will be ineffective without extension services that teach farmers how to use fertilizer effectively. For instance, soil testing for individual farms allows agronomists to make customized recommendations as to the best type of product, application rate, and formulation to achieve optimal results with the minimum amount of fertilizer. Often, large businesses that operate countrywide distribution networks and sell to farmers growing cash crops will see a market benefit to providing free or subsidized extension services to their farmer clients. The Dominion Farms model in Kenya and Nigeria links private companies to smallholder farmers and helps to group smallholders into commercial farms in order to provide threshold volumes for services. These services include technical training, access to mechanized equipment, guaranteed markets, and infrastructure development. Similar private sector-driven outreach includes India’s Hariyali Kisaan Bazaar, a rural supermarket chain that attaches agronomic and financial services to input sales. Where the private sector does not provide these services, extension should be treated as a public good and occupy an important place in governments’ agriculture and rural development strategies. Ultimately, well-informed farmers are more likely to increase productivity and demand fertilizer products as part of their cultivation strategies.

**PRINCIPLE 3: Build a regional framework for fertilizer trade.**

Expanded regional fertilizer markets realize efficiencies and economies of scale in trade, manufacture, R&D, and testing. Regional Economic Communities (RECs) can create a regional market for fertilizer by harmonizing fertilizer policies among member states. A regional fertilizer policy should allow for free entry of fertilizer between members and acceptance of fertilizer compounds and shipments that have been approved or inspected by a member country. The establishment of harmonized regional policies would reduce transaction costs, and the resulting market might be large enough to make the local manufacture of fertilizer a viable investment option. A fully-integrated Southern African Development Community (SADC) market, for example, could be large enough to sustain profitable ammonia or urea production in Mozambique that could supply the entire region. To date, regional harmonization of fertilizer policies remains elusive, and numerous constraints to fertilizer trade currently exist. In Sub-Saharan Africa, broader strategies to harmonize agro-input policies are underway in both the East African Community (EAC) and ECOWAS regions, but no concrete regional fertilizer policy draft or document has been circulated. Similarly, while SADC has made strides with seed policy harmonization, little has been done to address fertilizer policy.

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REDUCE CROSS-BORDER TRANSPORT COSTS.

Fertilizer trade is frequently hampered by the significant costs associated with crossing borders. The farmgate price of imported fertilizer ultimately reflects all of the taxes, delays, and logistical costs of cross-border transactions. For example, each time a truck enters Malawi from Mozambique, it must pay seven different types of taxes. Importers seeking to transport fertilizer across multiple countries also typically have to pay a separate insurance bond for each country of transit. Zambian importers have avoided multiple insurance bonds and reduced fertilizer costs by $150 per ton through membership in the regional Common Market for Eastern and Southern Africa (COMESA) and SADC agreements. Transaction costs are often exacerbated by corruption among border officials or restrictions on competition within the various supporting industries, such as transporters, freight forwarders, handlers, and storage operators. Eliminating cross-border taxes through membership in bilateral or multilateral free trade agreements, streamlining border processes, and fostering competition among supporting industries would remove many of these hurdles.

SUPPORT THE ESTABLISHMENT OF REGIONAL INSPECTION AND CERTIFICATION.

If fertilizer policies have been harmonized on a regional level, regional inspection of fertilizer allows for shipments to be approved once upon entry into a region. Fertilizer is currently subject to mandatory pre-shipment inspections at ports and border crossings, which introduces delays in shipment due to multiple inspections. Fertilizer also faces incompatible packaging and product specifications for accepted fertilizer compounds across countries. In SADC, for instance, the main NPK fertilizer compound used in Zambia cannot enter Malawi because it does not meet Malawi’s specifications. In Uganda, new fertilizer products must undergo a mandatory three seasons of field testing (typically three years) before approval, even if the product is registered and used in neighboring Kenya in the same agro-ecological zone. A regional certification scheme would facilitate the product approval process by recognizing a product has been approved in one or more countries in the region. This could be accomplished by simply recognizing another country’s approval procedures or by reducing the required seasons of mandatory field tests for a product that has been approved by a neighboring country. Regional certification would avoid duplicative testing and compliance costs and allow for the redistribution of fertilizer across borders as demand develops throughout the season. Achieving regional standards for certification, however, requires support to countries without adequate existing capacity for inspections, laboratory testing, and regulatory enforcement.

CONCLUSION

Experience across a diverse set of economies shows that a focus on market control, quotas, and price-setting for both inputs and outputs has proven to be ineffective and distortive. Direct government intervention into the market should focus on policy that supports—rather than controls—an open and competitive fertilizer sector that drives down the time and cost to deliver high-quality fertilizer products. A strong legal and regulatory framework, coupled with public policies and investments that reduce the cost of finance and trade, will mitigate risks for fertilizer suppliers and encourage long-term investments in equipment and in building distribution networks. At the same time, fertilizer demand must be promoted with an integrated approach to increasing the profitable use of fertilizer by farmers through agricultural research, extension services, and linking farmers to output markets.