Focus Section C

Improving Access to Fertilizers, Improved Seeds, Pesticides and Veterinary Inputs in Policy Development and Implementation

Improving farmers' access to inputs such as chemical fertilizer, improved seeds, pesticides, and veterinary products is critical to boosting agricultural productivity in West Africa while reversing the trends of soil mining and resource degradation. Productivity growth, which reduces unit costs of production, is in turn essential if access to food is to be improved for the large proportion of consumers that spends a high share of its income on food (see Chapter 6). Access to these inputs, however, is hindered by structural problems in agricultural input markets in West Africa.

Structural problems in input markets and their consequences in West Africa

These inputs share several characteristics that make it unlikely that competitive markets will spontaneously develop to supply high-quality fertilizers, improved seeds and veterinary inputs to agricultural producers reliably in the absence of supporting public actions:

- The demand for these inputs depends on the expected price of the output, which is often uncertain, volatile, and may be low due to poor marketing infrastructure and the effects of government policies.

- The quality of these inputs is not apparent from simple visual inspection. It reveals itself only after use, and even then it is often difficult to judge their efficacy due to the effects of many other intervening factors (e.g. water availability, pests) that affect the inputs' performance. This uncertainty regarding quality creates incentives for unscrupulous vendors to adulterate products, e.g. by adding sand to fertilizer. In the absence of effective quality assurance mechanisms, such as enforced grades and standards and reliable guarantees by vendors, such behaviour may lead to a situation where bad quality inputs drive out good quality products due to the lower prices of the poor quality products and the weak ability of farmers to distinguish ex-ante between the two.

- These products require a complement of technical information to ensure their best use. This involves, for example, instructions on the best timing and application rates for fertilizers and pesticides and the choice of the appropriate nutrient mix of fertilizer for a given farmer's crop and soils. Failure to provide such technical advice can greatly reduce the efficiency of use of these inputs, and for pesticides and veterinary products pose important health risks for producers, their families, their animals and consumers. The low level of literacy in rural areas of many ECOWAS countries drives up the cost of providing such technical advice, as it has to rely more on oral communication than on written materials.

- The economic return to use of these inputs, particularly fertilizer and seed, is risky in rainfed conditions where rainfall is unpredictable. In the absence of risk management tools such as weather index-based insurance, risk-averse farmers will tend to under-use these inputs and may defer purchasing them until they are sure that the rains are firmly established for the season. This delay in their purchasing shifts all the risk of holding inventory to the input dealers, creating an incentive for them to reduce their stocks, which

can lead to shortages if production conditions turn out to be good.[147]

- Expenditures required for these inputs can be substantial relative to farmers' net incomes, and the return is typically obtained only after a period of months when the crop is harvested or the animal sold. Thus, even if the inputs are profitable to use, in the absence of a well-functioning credit market cash-flow constraints frequently prevent farmers from purchasing them. In the past, single-channel marketing systems for cash crops such as cotton provided access to the inputs, as they could be provided at planting by the monopsonistic crop marketing agency and the credit recovered at harvest by deducting the amount owed from the final payment for the crop. As a result of market reform programmes, many of these single-channel systems have been liberalized, making such credit-recovery arrangements less feasible and thus lessening farmers' access to these inputs. The development of well-functioning input markets therefore needs to go hand-in-hand with the strengthening of improved rural financial systems.

- Fertilizer is subject to large economies of scale in both manufacturing and procurement. For example, the minimum efficient volume for a urea plant is approximately 500 000 mt/year, and import procurement by sea in volumes less than 25 000 mt of product (approximately 10 000 mt of nutrients) can drive up costs by around 30% (Morris et al., 2007a; Gregory and Bumb, 2006). Yet only Nigeria has a level of urea consumption that would come close to capturing the scale economies in manufacture, and four of the ten ECOWAS countries for which FAOSTAT data are available have consumption levels under the minimum efficient import volume.[148] Given the scale economies and capital intensity of fertilizer manufacturing, there are significant barriers to entry in both manufacturing and the import trade. These, in the presence of small national market sizes, frequently lead to oligopoly or monopoly at the manufacturing and import levels, further driving up prices.

- Fertilizer is bulky, which adds a significant transport-cost component to the price farmers pay for fertilizer, particularly when road conditions are poor. In West Africa, these transport costs are further driven up by high port charges (almost all fertilizer used in the region is imported) and the lack of competition in setting trucking fees in many of the countries (Bumb et al., 2011). These high transport costs also result in lower farm-level output prices, further discouraging the use of fertilizer and other improved inputs.

- An overriding structural constraint is the fragmentation of the region into many small national markets, each with its own regulations and product specifications. For example, although cotton production conditions are similar across Benin, Burkina Faso, Côte d'Ivoire, Mali and Togo, the national cotton companies in each of these countries specifies its own distinct formula for NPK fertilizer. Reducing this artificial product differentiation would allow larger scale acquisition of the fertilizer for the countries, leading to potential savings of up to US$40/mt, equivalent to about 8% of the farm-price of fertilizer in Mali (Bumb, et al., 2011). Similarly, varying standards across countries for entering into the agro-dealer business discourages the development of efficient regional chains of agro-dealers.

- Lengthy regulatory procedures for certification (especially important for improved seeds, pesticides, and veterinary inputs) add further to costs, particularly when each country has its own standards. The diversity of national product standards discourages private-sector investment in provision of these inputs, as suppliers who enter the market have to try to amortize the costs of going through each national certification process over a very small market volume and may face legal restrictions on exporting product to neighbour-

147 One implication of this phenomenon is that risk management tools such as weather-based insurance need to be targeted towards input dealers as well as farmers.

148 It is likely that several of the five countries for which data are not available (Benin, Cape Verde, Guinea-Bissau, Liberia and Sierra Leone) also fall below the minimum efficient import level.

ing countries. This disincentive further limits competition, creating conditions of oligopoly or monopoly that can further drive up input prices to farmers.

- A particularly thorny problem regards genetically modified organisms (GMOs), which are permitted in a few countries (e.g. Burkina has approved BT cotton) but not in others. The varying national rules regarding GMOs will prevent a formal regional market in such seeds from emerging in the near future, but there is likely to develop an informal cross-border trade, which will make any consistent regulation of such seeds more difficult.

The impact of these structural problems in West African input markets has been very low levels of use of improved inputs. As detailed in Chapter 3, average fertilizer use in the ECOWAS zone is among the lowest in the world at less than 7 kg/ha of arable land, and substantially below levels found in East and Southern Africa (38 kg/ha). The private sector has been very slow to fill the void created by the withdrawal of the state from input provision, for many of the structural reasons outlined above.

Policy response: input subsidies

Since the 1990s, West African states and their development partners, including NGOs, have undertaken a number of actions to try to strengthen farmers' access to these to improved inputs. In June, 2006, African Union Ministers of Agriculture, meeting in Abuja for the African Fertilizer Summit, issued the Abuja Declaration on Fertilizer for an African Green Revolution (African Union, 2006). The Declaration set an extremely ambitious target of increasing fertilizer use in sub-Saharan Africa from an average of 8 kg/ha to 50 kg/ha by 2015. Among its provisions, the Declaration called on all African Union member states to:

- Take actions to help reduce the cost of fertilizer, such as harmonization of regulations to allow duty- and tax-free movement of fertilizer across all borders in Africa.
- Immediately develop voucher-based fertilizer subsidy programmes, especially focused on poor farmers.
- Facilitate the development of domestic fertilizer production capacity.
- Accelerate investment in market infrastructure, transport, and capacity-building programmes for farmer organizations to improve output marketing, which would increase the incentives to use fertilizer.

The Declaration also called upon the African Development Bank (AfDB) to develop an African Fertilizer Financing Development Mechanism to meet the financing requirements of the actions called for by the summit. The AfDB established the fund in 2007. In addition to the activities listed above, it is also aimed at funding technical support for helping member states improve their fertilizer policies, improving procurement and distribution facilities, and providing credit guarantees for fertilizer importers and distributors.[149]

In the ECOWAS region, ECOWAS, WAEMU, member states and their development partners have taken several actions in recent years to improve farmers' access to inputs, ranging from input subsidies to attempts to strengthen private-sector input production and marketing systems.[150] Frequently, however, interventions (particularly subsidy programmes prior to the implementation of voucher schemes) have occurred in an unpredictable and uncoordinated manner, creating uncertainty and often financial losses for private input dealers who invested in inventories of inputs only to see their market undercut by the subsidised distribution programmes. This has in turn led to reluctance by the private sector to invest further in input distribution. The reluctance was frequently interpreted by policy makers as evidence that the

149 See http://www.afdb.org/en/topics-and-sectors/initiatives-partnerships/african-fertilizer-financingmechanism/abuja-declaration/

150 Examples include the Marketing Inputs Regionally (MIR) and MIR Plus projects jointly implemented by the International Fertilizer Development Center (IFDC) and ECOWAS that aim to build networks of private agro-input dealers (http://www.ifdc.org/Projects/Current/MIR_Plus) and the USAID-supported West Africa Seed Alliance (http://idea.usaid.gov/sites/default/files/West_Africa_Seed_Alliance.pdf), which strives to support the development of a commercial seed industry.

private sector was incapable of supplying these inputs efficiently, thus justifying further public intervention. In this way, a negative dynamic was created in which the burden of input provision, often at subsidized rates, was shifted increasingly to the public sector, imposing a growing fiscal burden on the state.

Wanzala-Mlobela, et al. (2011) and Druilhe and Barreiro-Hurlé (2012) provide detailed analyses of the experiences with fertilizer subsidy programmes across Africa, including five countries in West Africa (Burkina Faso, Ghana, Mali, Nigeria and Senegal). Although Nigeria had reintroduced a nation-wide fertilizer subsidy programme in 1999, the majority of West African countries launched their programmes in 2008 in response to the spike in world food prices, often in conjunction with subsidies on seeds as well. Overall, the outcomes have been mixed. Key weaknesses in the programmes included:

Lack of targeting. In contrast to programmes in several East and Southern African countries, the subsidy programmes in West Africa were generally untargeted (open to all farmers growing a particular crop) and often involved the state rather than the private sector in input procurement. In Nigeria, in discussing the government's decision in 2011 to move away from its untargeted, government-run fertilizer subsidy programme and move to a voucher-based programme in collaboration with private agro-dealers, the Federal Minister of Agriculture stated that the previous programme had become rife with corruption and that only 11% of the subsidized fertilizer reached what he called "genuine farmers", with the remainder ending up in the hands of what he termed "political farmers" (Sharpedgenews.com, 2011).

The lack of targeting meant that subsidised fertilizer sometimes displaced commercial sales. For example, an IFPRI study estimated that every tonne of subsidised fertilizer provided in Nigeria in the period 2003-2010 displaced between 0.19 and 0.35 tons of commercial fertilizer sales (Takeshima et al., 2012). This displacement had two effects. First, it discouraged the private sector from investing in the fertilizer distribution system. Second, it meant that less of the subsidised fertilizer went to small farmers who had been using very little of it previously and for whom the incremental increase in production would likely be higher than for larger farmers who were already using substantial amounts of the input. The lack of targeting thus had negative effects on both efficiency and equity. ROPPA has also expressed concern that the benefits from the untargeted input subsidies launched in many West African countries since 2008 have been predominantly captured by large farmers (ROPPA, 2012b).

Government involvement in procurement. Other major problems involved complex and non-transparent government tendering procedures, lack of financial sustainability, and frequent rent-seeking. Government tender systems for fertilizer imports were sometimes fraught with limited competition and corruption, leading to higher prices. Moreover, delays in payments to importers and distributers have led to late delivery of fertilizer to farmers, undermining its effectiveness (Wanzala-Mlobela, et al., 2011). In countries where private companies negotiate import prices directly with exporters, prices have generally been lower, especially if companies can negotiate volume discounts and if the fertilizer importing/wholesaling industry is competitive. Kenya stands out as a country that has successfully liberalized and expended fertilizer markets, resulting in a sharp reduction of fertilizer costs (World Bank, 2013b).

Lack of attention to fertilizer quality. The near-exclusive emphasis of these programmes on reducing the price of fertilizer to farmers has sometimes led to a lack of attention to fertilizer quality, with farmers complaining about the quality of the subsidised input.

Based on their review of fertilizer subsidy programmes across Africa, Wanzala-Mlobela et al. have developed a set of best practices that can help mitigate these problems (Box C.1). These best practices stress the need to move away from the type of untargeted subsidies that have been common in some of the ECOWAS member states towards more targeted voucher systems. In general, subsidies need to be "smart", i.e. targeted,

capped, and time-bound, in order to create rather than distort markets. Even with voucher systems, however, careful design and implementation are crucial to their success. A number of challenges have been encountered including late distribution of fertilizer, redemption of vouchers by distribution agents, counterfeiting vouchers, fertilizer vouchers redeemed by beneficiaries for cash, and price inflation (if demand exceeds fertilizer supply).

The best practices listed in Box C.1 refer to national input subsidy programmes. On a regional basis, it is also important that there be some harmonization of subsidy rates across countries in order to avoid flows of more heavily subsidised inputs from one country to neighbouring countries where subsidy rates are lower.

Policy response: building a regional market for agricultural inputs

While subsidies help address the short-run problem of high input costs, they do not address the underlying structural reasons for high input costs

Box C.1 Recommendations for improving the effectiveness of fertilizer subsidy programmes in Africa

1. Governments should withdraw from involvement in the importation and distribution of fertilizers and integrate the private sector into the subsidy programme so that there is a single importation and distribution system for fertilizer, rather than two separate and competing channels.

2. Replace the current tender system with performance-based multi-year contracts with private-sector firms in order to ensure timely importation and distribution.

3. Eliminate restrictions on participation in subsidy programmes by the private sector in order to spur competition and hold down costs of delivering the product to farmers.

4. Subsidy programmes should include a targeting mechanism (input vouchers) in order to minimise displacement of commercial sales and target limited public resources to farmers that have not used fertilizer so far.

5. Introduce measures to address the bottleneck created by slow government repayment of the subsidised portion of the fertilizer price.

6. Introduce an element of sustainability into the programmes by gradually phasing out the subsidy to current beneficiaries, encouraging savings schemes, removing barriers to access to loans, and supporting input dealers through training, accreditation and improved access to finance.

7. Incorporate complementary investments into the subsidy programme to ensure access to other yield enhancing inputs and advisory services to maximise the efficiency and profitability of fertilizer use.

8. Address the structural issues that drive up the cost of fertilizer and that drive down the profitability of its use (e.g., funding research to develop more fertilizer-responsive cultivars).

Source: Adapted from Wanzala-Mlobela et al., 2011.

in West Africa, including the fragmentation of the region into many small national markets.

Regional organizations such as CILSS, WAEMU and ECOWAS have all recognized the potential benefits of building an effective regional market in inputs and have taken actions to promote it. For example, since the 1990s CILSS has developed a system for common regional standards for pesticide registration in its member states. ECOWAS extended this system to all its member states in 2008. Similarly, the ECOWAS Commission for Agriculture, building on earlier work by WAEMU, issued rules in 2008 governing the registration, certification and marketing of seeds and plant materials within the Community. Following approval of these rules by the ECOWAS Council of Ministers and publication in the official ECOWAS journal in mid-2008, member states were supposed to modify their national legislation to be consistent with the Community-wide rules. By 2012, however, several member states had not done so, and even in those that did, the national agencies in charge of enforcing the rules lacked the resources to do so (CORAF/WECARD, 2012). Thus, the problem is not so much one of design of harmonized regulation at the regional level to create a regional market in inputs as it is one of implementation at the national level. Any effective effort to create a regional market in inputs will thus need to be accompanied by funding and a structure of incentives at the national and local levels to bring it to reality.[151]

Access to improved inputs will be critical to continuing West Africa's agricultural transformation. In fact, meeting the huge production increases contemplated by national CAADP plans and the MDGs (see Chapter 11) will be impossible without greater access to these inputs. Large structural problems, however, constrict the market for these inputs. The initial national government policy response of subsidies requires improvement and additional policy action from national governments is required to create the well-functioning regional markets that can increase access to these inputs.

151 Maintaining national markets that are not integrated creates rents caused by price differences across borders in excess of transport costs, so those in a position to appropriate those rents (e.g. agents controlling the border crossings) have an incentive to resist implementation of moves to create a more integrated market.