



## New Approaches to Input Subsidies

*Input subsidies can underwrite risks of early adoption of new technologies and can help input distributors achieve economies of scale, which, in turn, allow them to reduce prices charged to farmers. But the renewed interest in fertilizer subsidies in Sub-Saharan Africa needs to focus on sustainable solutions to market failures. “Market-smart” subsidies—delivered for example through targeted vouchers and matching grants—can be used to jump-start agricultural input markets. Such subsidies can stimulate demand in private markets and can underwrite selected start-up costs of private distributors that are entering input markets. Like any subsidies, they must be used with caution because they have high opportunity costs for productive public goods and social expenditures. They are also at risk of political capture and, once implemented, may be impossible to reverse.*

Agricultural productivity has grown rapidly where improved varieties and fertilizers have been widely adopted, but not where adoption has lagged. Especially in Sub-Saharan Africa, market failures continue to be pervasive for seed and fertilizer because of high transaction costs, significant risks and the small size of markets (which prevents the realization of scale economies). As a result, low use of improved seed and fertilizer is one of the major constraints on increasing agricultural productivity in Sub-Saharan Africa. The recent renewed interest in input subsidies to overcome market failures needs to focus on sustainable solutions to market failures.

Input subsidies were tried in many developing countries during the 1960s and 1970s. But after failing to live up to expectations, they were generally phased out as part of the liberalization and privatization reforms that started during the 1980s. Whenever direct price subsidies have been used to promote seed and fertilizer, the results have almost always been disappointing. The cost of the subsidies has been high and unsustainable, and the modest benefits generated have been captured by larger farmers. Despite this record, input subsidies continue to have strong support, both from farmers and from politicians who view farmers as an important constituency. In recent years, countries have tried new ways of providing subsidies that help stimulate market development. These “market-smart” subsidies may be justified in certain cases to help establish the foundations for sustainable private sector–led input markets.

### What is the rationale for input subsidies?

Various benefits are cited in justifying input subsidies: *economic* (economic benefits exceed private benefits), *environmental* (subsidies offset negative externalities), and *social* (subsidies reduce poverty or provide safety nets). Two questions must be addressed by policy makers in considering whether subsidies are an appropriate instrument for promoting increased input use:

**1. Do the economic benefits to society generated by input subsidies exceed the costs of the subsidies?** Input subsidies can bring

economic benefits to society in several ways:

- They can stimulate input market development by offsetting high initial distribution costs until the market expands, economies of scale are realized, and prices decline.
- They can encourage technology adoption and diffusion by reducing the initial risks and costs of learning a new technology.
- They can overcome missing or imperfect credit or insurance markets for farmers that cause cash-limited farmers to use sub-optimal amounts of inputs.
- They can offset taxes or output price controls that make the use of purchased inputs financially unprofitable.
- They can generate positive environmental externalities associated with increased soil fertility and soil conservation—reducing soil erosion, deforestation, and carbon emissions.

But input subsidies can also be a major cause of negative environmental externalities when they encourage excessive application of fertilizer and other agricultural chemicals and result in runoff and water pollution (brief on Agriculture and the Environment).

**2. Are there circumstances in which input subsidies are justified for social rather than economic goals?** Use of input subsidies to achieve noneconomic goals can be justified only if subsidies represent the most cost-effective option for achieving the desired social objective compared with alternative instruments, such as food aid and cash transfers. Whether input subsidies are cheaper than food aid depends on the relative costs to the government of acquiring inputs and food and delivering them to needy households. The cost-effectiveness of subsidies also depends on the additional food output likely to be generated per dollar of input distributed to and used by farmers. In addition, it relies on other cost savings associated with aid through inputs, such as avoiding farm-to-market transport and handling costs incurred when farmers must sell a portion of their crop to repay input loans.



When food markets work poorly, distribution of subsidized inputs or food aid may be appropriate for safeguarding the food security of poor rural households that depend on agriculture for their livelihoods. But when food markets work well, cash transfers that enable households to purchase food may be more appropriate, especially in marginal areas where food production pay-offs from using improved inputs are risky.

### Input subsidies must be redesigned as “market-smart” subsidies.

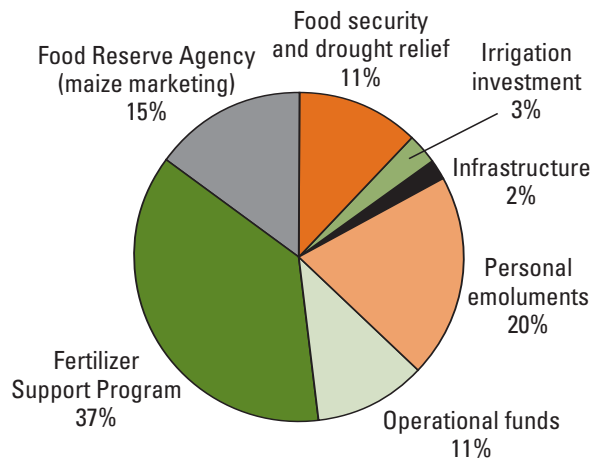
Strategies for promoting increased use of improved inputs should heed the lessons of the past. In practice, it has been difficult to implement input subsidy schemes without exposing governments to extremely high costs and without giving rise to undesirable market and distributional effects. For example, in Zambia, 37 percent of the public budget for agriculture in 2004/05 was devoted to fertilizer subsidies (figure 1). Many of those subsidies went to relatively wealthy farmers rather than to the smallholders whom they were intended to benefit. Meanwhile, investment in core public goods, such as the research and extension needed to increase productivity, has fallen.

Although the long-term objective of policy makers must be to support the emergence of viable private sector-led input markets, subsidies may be justifiable on a temporary basis to stimulate increased seed and fertilizer use. If policy makers use input subsidies, they should, however, implement the subsidies in ways that encourage the efficient uptake of inputs as part of an integrated package of improved crop production technologies. Furthermore, they should not distort relative prices of the various inputs used by farmers so as to encourage economically inefficient use.

When used as part of a broader strategy to address the binding constraints on supply and demand, well-designed input subsidies can help to overcome temporary market failures. Above all, subsidies should be “market smart.” They should contribute to the development of viable and competitive private sector-led input markets rather than undermining them. Market-smart subsidies should be targeted at poor farmers to encourage incremental use of inputs by those who would otherwise not use them. Also, those subsidies should not displace existing commercial sales. They should always be introduced for a limited period, with a clear schedule for phasing out when they have achieved their purpose. As volumes increase, the market prices of improved seed and fertilizer will come down to the true economic prices and reduce the need for subsidies.

Vouchers, matching grants, and partial loan guarantees are all instruments that can be used to deliver market-smart subsidies. In Malawi, under a scheme known as Inputs for Assets, vouchers were distributed only to those who had participated in a public works project. That approach provided some self-targeting because wealthier farmers were less likely to participate in these projects. Vouchers were redeemable with local agrodealers, which strength-

Figure 1. Public Budget Allocation to the Agricultural Sector in Zambia, 2004/05



Source: Jayne, T. S., J. Govereh, Z. Xu, J. Ariga, and E. Mghenyi. 2006a. “Factors Affecting Small Farmers’ Use of Improved Maize Technologies: Evidence from Kenya and Zambia.” Paper presented at the Annual Meeting of the International Association of Agricultural Economists (IAAE), August 12a. Gold Coast, Queensland, Australia.

ened effective demand for inputs and increased sales—and profits—of private distributors. More recently, the government of Malawi has sought to increase demand significantly through large-scale distribution of vouchers (about 3.5 million in 2006/07). Farmers are expected to pay a cash price when redeeming the coupon. The price is equivalent to about one-third the retail price of fertilizer. Because of the large scale of the program, its budgetary costs have been difficult to control, and displacement of smallholder commercial fertilizer sales has been high.

In Mali and Nigeria, matching grants were provided to producer organizations during an initial period for use in purchasing, testing, and learning about new technologies. Partial loan guarantees have been used effectively to support the establishment of a network of input dealers in Malawi and Kenya.

### Input subsidies must be part of a broader productivity enhancement strategy.

If input promotion schemes are to succeed, they must be comprehensive and multifaceted. They must encompass not only measures to improve the supply of inputs (for example, elimination of duties and taxes, improvement of transport infrastructure, support of strategic public-private partnerships to establish regional procurement and distribution facilities, scaling up of input dealer networks, and financing of input suppliers) but also measures to strengthen demand for inputs (for example, improving knowledge and skills of farmers, promoting availability and use of complementary practices such as irrigation and soil organic matter, and improving performance of product markets to increase prices and reduce risks). Building input markets, therefore, must go hand-in-hand with building output markets and linking farmers to those markets.

This policy brief has been extracted from the World Bank’s 2008 World Development Report, *Agriculture for Development*. Further information and detailed sources are available in the Report. The Report uses a simple typology of countries based on the contribution of agriculture to overall growth, 1990-2005 and the share of rural poor in the total number of poor (2002 US\$2-a-day level). In agriculture-based countries (mostly Africa), agriculture contributes a significant (>20%) share of overall growth. In transforming countries (mostly in Asia), nonagricultural sectors dominate growth but a great majority of the poor are in rural areas. In urbanized countries (mostly in Latin America and Europe and Central Asia), the largest number of poor people are in urban areas, although poverty rates are often highest in rural areas.