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Policy Options for Smart Subsidies in Malawi

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Key Messages

- The impact of input subsidies can be improved by focusing on efforts to increase the rate at which inputs are converted to outputs.
- Some of the least productive farming households cannot make profitable use of subsidized inputs and can be better assisted by social safety net programs such as cash transfers.

Introduction

Input subsidy programs, through which farmers receive fertilizer (and in some cases seed) at below-market prices, were popular in many African countries in the post-independence era. They were largely phased out during the 1990s, however, because the emerging consensus at that time was that they only weakly contributed to agricultural productivity growth, food security, and poverty reduction goals and imposed major burdens on national treasuries that crowded out other important public expenditures to support agricultural development.

The subsidy approach underwent a renaissance around the turn of the millennium. The introduction of what came to be called the "second generation" of input subsidies began in Malawi but has taken ahold across the continent. Unlike post-independence era predecessors, the new subsidies were going to be "smart" or "targeted" subsidies. The defining differences between first- and would-be "good" second-generation subsidies included that the newer subsidies should:[1]

(i) support the development of private sector fertilizer markets;

(ii) focus on areas and farmers with currently low but potentially profitable fertilizer use;

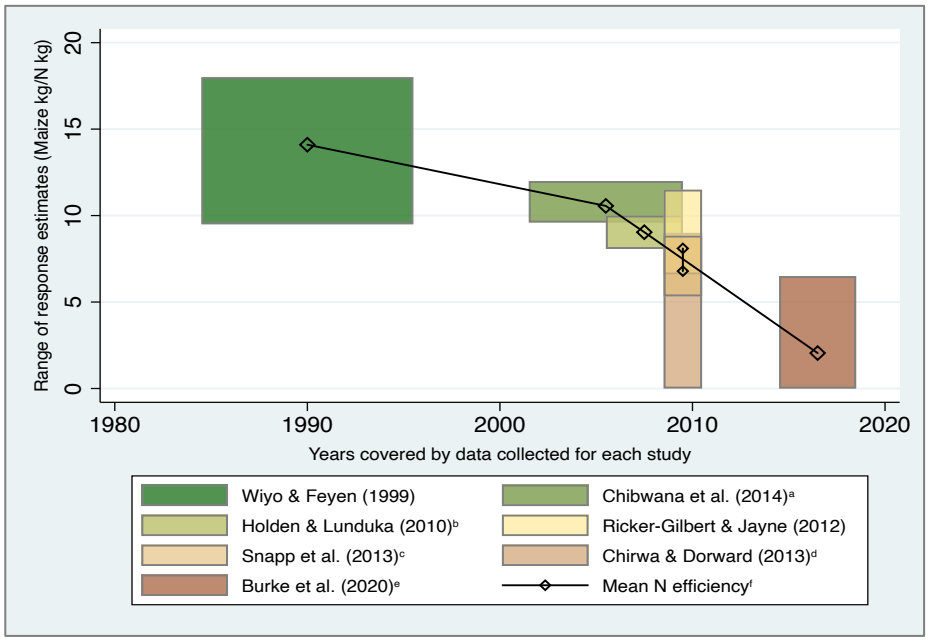
(iii) be part of a wider sector strategy; and

(iv) have an exit strategy.

What has the second-generation (not) accomplished?

While this may seem like clear guidance, it has been difficult to design and implement "good" subsidy policies in practice because the simplicity of the guidelines described above belies the complexity of the real world. In Zambia, for example, the idea was that subsidies were "smart" because they would crowd-in the private sector by priming markets and inducing demand. In other words, farmers would receive subsidized fertilizer, realize its benefits, then begin to demand the same inputs from the private sector. This was to be accomplished by targeting "poor but efficient" farmers. According to this plan, at least the first two defining characteristics outlined above would be met. In practice, however, successful implementation proved elusive because of targeting difficulties in practice. In

Yield response to nitrogen on farmer-managed fields over time in Malawi



Sources correspond to the color coding in the legend. The box representing each study spans the range of each's yield response estimates on the vertical axis, and the years covered by their data along the vertical axis. For example, Wiyo and Feyen estimated response rates from 9.5 to 16.5 using data collected between 1984 and 1995. For reference information of cited studies and further details, see Burke et al. (2021).[4]

reality, the vast majority of farmers are poor, and very few can be identified as demonstrably more efficient than any other, so there was no real way to implement targeting. Research evidence also shows that input subsidy programs have generally not promoted commercial fertilizer sales.[2,3]

A major advance in the past few years (in Zambia, Malawi, and other countries) has been a shift towards relying on the private sector to provide subsidized inputs (versus governments providing inputs directly to farmers). This is a step in the right direction but mounting evidence has begun to show that using the private sector is not the same as supporting development of the private sector. Supporting growth implies that farmers could graduate from a subsidy program and continue using commercially purchased fertilizers. If fertilizer use stops when the subsidy stops, a policy cannot claim to have supported the development of the private sector.

What could be done differently — what did the second generation miss?

Most input subsidy programs to date have focused on increasing fertilizer use, with little attention to helping smallholder farmers use fertilizer more efficiently and profitably. This has depressed the impacts of the subsidy programs, and hindered development of effective exit strategies. There is major potential for improving the impacts of input subsidy programs by focusing on efforts to increase the rate at which inputs are converted to outputs, or, in Malawi's case, how much additional grain is harvested for each additional kg of fertilizer applied.

Optimistically, based on field trials led by agronomic researchers, Malawian farmers may see as much as 20 or more kgs of maize per kg of fertilizer. In practice, however, on farmer-managed fields, the rates of return have been much lower. In fact, the farmer-based estimates of yield response to fertilization over

time suggests fertilizer efficiency has been declining (see figure).

So, what can make fertilizer profitable, and make fertilizer subsidies more effective? In short, policies could be built accounting for the complexities of fertilizer profitability beyond price supports. Specifically, some examples include:

1. Subsidizing the "right" inputs — e.g., fertilizers that are appropriate for the farmer's environmental and economic needs. This prescription can vary over space and between farmers, depending on a soil's physical, biological and chemical properties, and which nutrients are lacking that fertilizer can provide.

2. Complementing fertilizer subsidies with investments to build soil health to ensure yields respond to fertilizers. While there is no "silver bullet," one problem that is pervasive in Malawi is low levels of soil carbon and organic material. This problem helps explain the trends in the earlier figure. It is pervasive in Malawi because the frontiers of unused arable land have been reached in many places due to the country's population growth and tight focus on staple grains over the past few decades. These factors have likely led to less fallowing and limited crop rotation, which depletes soils of organic (carbon rich) material. Over the long run, this reduces a soils capacity to hold water and nutrients. Fortunately, sick soils can be treated. In the case of low carbon, this could include rotations and the incorporation of residues and other organic material to boost yield responses to fertilizers. It has indeed been found in Malawian farm-based data that these practices can have a measurable impact on soil health in just a few years.[5]

3. Even on responsive soils, management is extremely important. In the most recent study depicted in the above figure, it was found that late weeding was a significant detriment to yield responses. Appropriate timing of fertilizer applications is also important, and can be different for different soils, fertilizer, and crops. Again, there is no agronomic cure-all, but finding the right prescriptions will almost certainly require an invigorated extension system that enables bi-directional learning between agents and farmers. In additions to underutilized existing measures known to science; Malawian farmers have undoubtedly amassed a substantial reservoir of local knowledge on how to best manage local conditions with local resources. Extension workers can gather and disseminate this knowledge, but only if they are present, trained, and possessing the capacity to move amongst villages. It is no surprise that the greatest achievements in agricultural growth in Africa over the past several years have occurred in Ethiopia — the same country with, by far, the largest network of extension agents.[6]

Some of the farm households currently targeted by AIP are not economically productive. Even if policies to improve fertilizer response are successful, these farmers – like those with very small landholdings and those living in households with few or no able-bodied adults – will be unlikely to realize the yield gains that would ensure their food security and

lift them out of poverty. Their problems go far beyond low productivity, so input subsidies are unlikely to help their situation. Instead, the Government may wish to consider targeting them with other programs more suitable to their needs, such as social protection programs. Cash transfers in particular are effective at reducing poverty.

Can cash transfers help labour- and land-constrained unproductive farmers?

Cash transfers have been shown to increase the consumption and asset accumulation of poor recipients in Malawi and elsewhere in Africa.[7,8] As long as markets function normally, cash transfers also improve beneficiaries' food security and resilience.[9] In Malawi, cash transfers help beneficiaries invest in agricultural assets,[10] reduce the need to resort to ganyu to supplement household incomes,[11] and may even improve nutritional quality and diversity.[12] The positive impact of cash transfers on economic wellbeing has additionally been found to improve mental health and psychosocial wellbeing.[13]

Cash transfers have two main advantages over the provision of subsidized goods or in-kind transfers: First, they are cheaper to deliver as they obviate the need for transporting bulky goods like fertilizer. Second, they allow beneficiaries to choose what to spend the cash on, and thus enable them to better satisfy their diverse needs.[14,15] Contrary to popular belief, this does not lead to increased consumption of temptation goods such as alcohol or tobacco.[16] Another common concern that cash transfers might put upward pressure on prices, negating the increased purchasing power of transfer recipients and harming non-recipients, has also not been supported by evidence in Africa.[8,15]

Decades of cumulative experience from cash transfer programs have produced several lessons applicable to Malawi, should it decide to replace some input subsidies with cash transfers:

1. An appropriate targeting mechanism needs to be designed to determine who should receive the transfers. As discussed above, this is often more easily said than done. The most common practices in developing countries are proxy means testing (PMT) and community-based targeting (CBT). PMT can be accurate and objective, but requires careful evaluation of the suitability of proxies, ideally using nationally representative survey data, and it is ill-suited to addressing the impacts of short-term shocks. CBT can respond to short-term shocks, but it is vulnerable to elite capture and can create tension and division in communities. Targeting criteria should therefore be understandable, transparent, and socially acceptable. Clear communication throughout the duration of the program and well-defined feedback mechanisms help prevent social discord. Both targeting mechanisms are expensive to implement. It is essential not to underestimate the time and human resources required for the targeting process – and the level of understanding required by those involved. This is especially important because of the need for frequent

retargeting as beneficiaries' circumstances change over time.[15,17]

2. Where the necessary infrastructure is already in place, electronic distribution using mobile money or bank cards is logistically less complicated than physical cash, and therefore preferable. In addition, electronic distribution reduces overcrowding and improves privacy. On the other hand, using proven existing mechanisms – such as those currently used by the Social Cash Transfer Program – is quicker and helps avoid costly mistakes.[18]

There should be flexibility in determining the size and frequency of transfers to allow for changing circumstances such as price fluctuations and production shocks. Not all beneficiaries have to automatically receive the same amount of money, and not all beneficiaries are likely to need transfers at all times. In other words, both horizontal and vertical flexibility should be built into transfer program.

Conclusion

Good subsidy policy can go beyond trying to identify "potentially profitable" fertilizer users — a holistic approach can actually increase the number of farmers who can use commercial fertilizer profitably. This could be achieved by stronger accompanying efforts to improve soil health and generate improved agronomic practices that smallholder farmers can adopt to raise yield response to fertilizers, which will in turn require greater funding for national agricultural research and development and extension programs, and a system that demands greater accountability from these public institutions. That would, by definition, be a "wider sector strategy" which would also stimulate greater demand for commercial fertilizer use and hence also support the development of a private fertilizer sector. Efforts that help smallholder farmers use fertilizers more profitability at commercial prices by improving yield response rates would ultimately present a partial exit opportunity for subsidy programs without jeopardizing food security. In short, such an approach would be the definition of a "smart" subsidy. However, even the "smartest" subsidy program will leave some farmers behind. Those who cannot capitalize on cheaper inputs – whether it be because of lack of land or limited labor capacity – will require assistance through social safety nets such as cash transfers. An efficient targeting mechanism to consistently distinguish between those who can be best helped by a subsidy and those who require social protection will be crucial to making input subsidies work for all Malawians.

This Policy Brief is the collaborative work of William Chadza, Executive Director of the MwAPATA Institute and Jan Duchoslav, Research Fellow at the International Food Policy Research Institute (IFPRI), based in Lilongwe. For additional resources please visit https://mwapata.mw/publications and https://massp.ifpri.info/

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