Policy Brief No.7
April, 2021

Lessons Learnt: Promises, Achievements, Shortcomings, and Pitfalls of Malawian Input Subsidies

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Key Messages

- Input subsidy programs (ISPs) in Malawi have aimed at improving farmers' access to quality farm inputs.
- Subsidies have, at times, increased legume production and intercropping, which can improve household incomes and nutrition.
- Maize productivity and production have increased, somewhat improving food security and national food self-sufficiency, but many households remain poor and vulnerable.
- The incidence of poverty has not changed much since the introduction of the Farm Inputs Subsidy Program (FISP) in 2004/05.
- Maize imports, real maize prices, and persistent food insecurity continue to rise, requiring distribution of food aid.
- Early enthusiasm has begun to wane in the face of underwhelming improvement in several key areas.
- The rate of maize productivity increase from ISPs is smaller than many expected, primarily attributable to low maize response rates to fertilizers.
- The primary contributors to low maize yield response vary by location but can include soil biology (e.g., soil carbon), soil chemistry (e.g., pH), soil physics (e.g., sandy soils), and farm management.
- Integrated soil fertility management practices and improved on-farm agronomic practices (e.g., application timing and weeding) could improve yield responses to fertilizers.
- Policy reforms to improve the contribution of ISPs to farm-level productivity could include integrating complementary soil fertility management practices, such as organic fertilizers, improved targeting, and improving the efficiency of inputs supply chain systems.

Introduction

Input Subsidy Programs (ISPs) have historically been a central feature of Malawi's agricultural policy to improve smallholder farmers' access to seed and fertilizer, primarily for maize production. From 1971 to 1994, subsidized inputs were universally available through farmer clubs. In 1994, government introduced an "inputs for work" program, where farmers were paid in kind with farm inputs, and a "free inputs distribution" program, with both agricultural and social protection objectives.[1] The latter program introduced the "Starter Pack" and "Targeted Inputs Program" (TIP) where farmers were given free farm inputs.

The Farm Inputs Subsidy Program (FISP), originally called Agricultural Input Subsidy Program, was a major policy shift introduced in 2005. The new program was partly in response to declining maize productivity, the hunger crises of 2000/01 and 2001/02 agricultural seasons, and continued food

insecurity. FISP was a rationed and targeted partial subsidy, providing enough seed and fertiliser to plant 0.2 hectares of land. The Starter Pack and TIP had been designed for planting 0.1 hectares.

During the 2020/21 agricultural season, a newly elected national government implemented the Affordable Inputs Program (AIP) as the successor to FISP. One of the main differences was that the AIP would be aimed at reaching a larger share of smallholder farmers than had the more targeted FISP. One year on, government is keen to further examine how to improve Malawi's input subsidies. The purpose of this brief is to summarize the evidence from past experiences. We highlight the promises, achievements, shortcomings, and finally the factors that have hindered the impact of input subsidies (the pitfalls).

The Promises

The stated goals of the FISP in recent years have been to improve farmers' access to quality farm inputs and increase smallholder maize production and incomes. Increasing domestic food production is also often considered an issue of national security, and the often-stated goal of national self-sufficiency. Sensible arguments can be (and have been) made that it is better for the Malawian government to pay for the inputs of food production before a hunger crisis than it would be to pay for (or rely on) food aid after shortages set in.

In addition to increasing food production in the short term, one possible benefit of input subsidies would be the generation of effective demand for commercially purchased inputs. In other words, subsidies could "crowd in" demand for the private sector from farmers graduating from a subsidy program.

The Achievements

The previous FISPs have improved household maize productivity and production,[1] leading to improved food security at national and household levels due partly to a corresponding increase in the use of improved maize seed (both open-pollinated and hybrid varieties) and chemical fertilizers.[2] Maize productivity per hectare has roughly doubled since the inception of Malawi's input subsidy programs, up to around 2 metric tonnes per hectare (MT/ha).[3] Also, FISPs have marginally increased the incomes of farm households.[4] Further, previous subsidies have increased access and utilization of improved legume seed , and subsequently the total production of legumes, partly due to the incorporation of a legume pack in the subsidy. This has generally led to improved household nutrition, especially child nutrition.[5] Relatedly, the adoption of legume intercropping has also increased.[6]

The Shortcomings

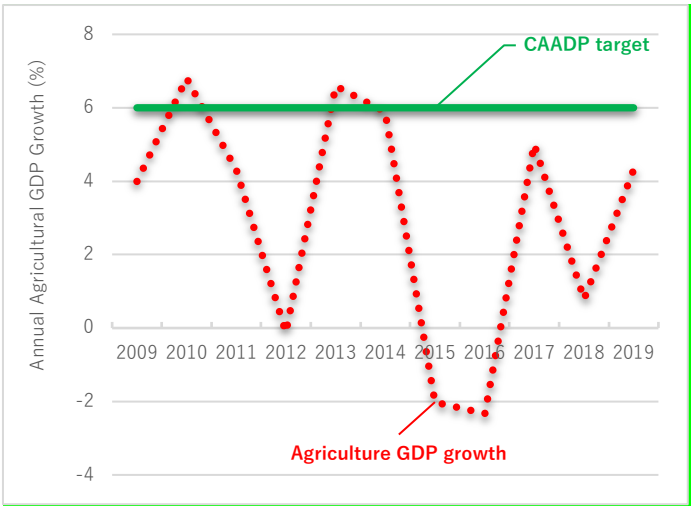
These successes notwithstanding, early enthusiasm over the performance of Malawi's input subsidies has begun to wane in the face of underwhelming improvement in several key areas.

First, although maize yields have increased, the rate of productivity increase has remained stagnant and lower than the 8 to 13 MT/ha range reported at agricultural research stations. In part, this is due to low maize response rates.[4,7,8] Thus, though not fully attributable to FISPs, the agricultural sector growth rate has been lower than the 6% targeted under the CAADP compact agreement for most of the years partly due to low maize productivity (Figure 1).

Second, household food security and national food self-sufficiency have not been achieved, by and large. Malawi remains a net importer of maize - e.g., informal net imports (those not taxed as they cross porous borders) average 14,000 MT per year between 2007/08 and 2020/21 seasons.[9]

Also, in the same period, Malawi formally imported a net of about 48,000 MT for the Strategic Grain Reserves (SGR) annually on average.[10.] Most of these purchases coincided with increases in real maize prices and persistent food insecurity, and the

Figure 1: Malawi's Agricultural Growth Rate Compared to CAADP Target



Source: World Bank- World Development Indicators (https://databank.worldbank.org/source/world-development-indicators#).

distribution of food aid was still required in many of the years under FISP.

Third, extreme poverty has slightly fallen but poverty incidence has changed a little as the proportion of those living below the national poverty line has hardly fallen since 2005. At least 51.2% of Malawians still live in poverty (an increase of 0.8% from 2011), and 20.1% of these are categorized as being ultra-poor (a decrease of 4.4% from 2011).[11]

The Pitfalls

The underwhelming performance of successive FISPs can be attributed to a number of issues that could be addressed to improve future programs.

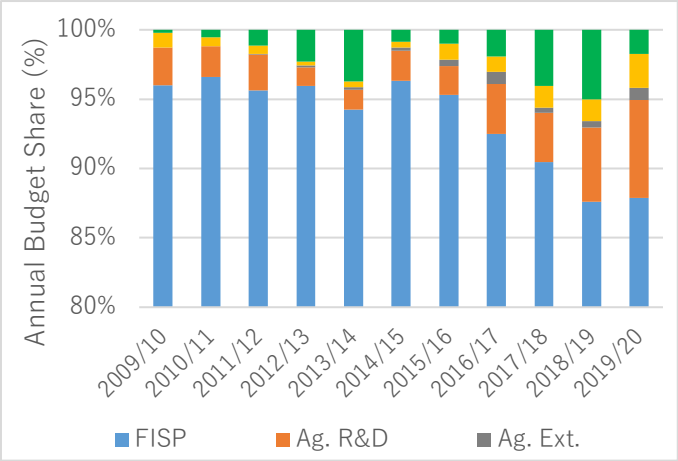
Low crop response rates to fertiliser application are endemic to Malawian agriculture. In part, this is due to soil characteristics such as low pH (acidity) and low soil carbon.[12] These problems are common when land is under continuous cultivation and soil and water management is inadequate. Consequently, while some older data show response rates as high as 18 maize kg per kg of N (kg/kg), more recent data show crop response rates in Malawi as low as 2.6 kg/kg or, when poor soil conditions are coupled with late weeding, effectively nil.[7] Even the earlier findings are unimpressive compared to results in other countries and a fraction of potential agronomic response rates.[6,8,13]

Poor targeting has had important effects on the distribution of ISP benefits. The FISP was meant to ration inputs to productive but poor beneficiaries who would otherwise lack access to commercial inputs, but evidence suggests successive FISPs have not been targeted effectively. In part, poor targeting is the result of inexplicit program objectives, such as combining food security and poverty alleviation objectives in the same program.[1] The need for explicitly defining program objectives is paramount. If, for example, the goal of the AIP is to increase national production at minimal cost to government, the poor who are seen as lacking sufficient land and labour may not be the primary target. If the goal is poverty alleviation, crowding in effective demand and improving food security of non-commercial farmers, on the other hand, the targeting criteria may be very different.

Displacing/crowding out commercial input sales by the FISP has been estimated at 15 to 21% (i.e., every 100 kgs of subsidized fertilizer reduces demand for fertilizer from the private sector by 15-21 kgs).[14] This is less dramatic than has been estimated in other countries, but failure to improve targeting could lead to larger displacement rates, especially if larger proportions of better off farmers benefit from the program. This could have detrimental effects on private input markets.

Diversion and leakage are also symptoms of poor targeting. Giving inputs to unintended beneficiaries has occasionally led to subsidized inputs being used on crops where farmers expect higher returns (e.g. cash crops).[1] Additionally, subsidized inputs meant for Malawian farmers have on occasion been traded across the border, thereby taking away the net economic gains that would have been generated from increased input use.[1]

Figure 2: Share of Government Funding in Selected Agricultural Development Programs



Source: Government budget documents

Crowding out other agricultural development investments: Between 2009/10 and 2019/20, the FISP received an average of 41% of government's budgetary allocations to the Ministry of Agriculture (MoA), while agriculture research and development (R&D, 1.1%), agricultural extension (0.1%), irrigation development (0.4%), and livestock development (0.8%) have received relatively little investment. In terms of the actual share of government's annual funding to agricultural programs, the FISP dominated all MoA programs in each of the years between 2009/10 and 2015/16. However, the share of FISP allocations fell steadily between 2016/17 and 2019/20 (Figure 2). This fall could reflect falling government revenues rather than a change in government policy towards FISP.

Correspondingly, subsidy rates are high, averaging 80% of the commercial price of a 50 kg bag of fertiliser in the period under review. The estimated subsidy rate for the 2020/21 AIP is 77%.[15]

At these rates, if government is not going to alter the composition of the MoA budget, additional resources will have to be raised from alternative sources to implement the programs prioritized under the National Agriculture Investment Plan.

The FISP will be a major financial burden in the long-run considering its over-reliance on imported fertilizers and the country's weakening foreign exchange reserves status. This, coupled with periodic rises in global fertiliser prices, cast doubt on the sustainability of agricultural subsidies in the long-run.

Policy Recommendations

Adopt a holistic approach to improving agricultural productivity. Alternatives include integrating complementary soil fertility management practices to address the problems of low soil carbon and soil pH.

Unbundle "smallholders" to identify and tailor interventions to the needs of specific categories of smallholders as some will require interventions other than input subsidies.

Redefine and stick to the stated program objectives and targeting criteria in order to effectively identify and deliver subsidized inputs to the intended beneficiaries. Explicit definition of program objectives and targeting criteria would likely facilitate effective targeting. Effective targeting would raise the welfare of poor rural households more directly through the contribution of the subsidized fertilizer to their own crop output.

Explore innovative ways of making the fertiliser supply chain more reliable and less risky. This could include promoting local private blending and using cost-effective transportation and distribution systems. It could also include changing the fiscal calendar to allow more time for planning and implementing subsidy programs.

Improve the effectiveness and fiscal sustainability of FISPs by gradually increasing investments in agricultural R&D and extension services and making output markets more accessible and remunerative for smallholders.

This Policy Brief is not for citation. For additional resources and to cite this work, please refer to:

Nyondo, C., Khonje, M., Mangisoni, J., Burke, W. J., Ricker-Gilbert, J. & Chilora, L. Forthcoming).“Lessons Learnt: Promises, Achievements and Pitfalls of Inputs Subsidy Programs in Malawi.” MwAPATA Working Paper. Available soon at: http://www.mwapata.mw/publications

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This research is made possible by the generous support of the Agricultural Transformation Initiative (ATI) through the Michigan State University (MSU) Food Security Group. The contents are the responsibility of study authors and do not necessarily reflect the views of ATI and/or MSU.

Published by MwAPATA Institute, Chilanga Drive, Off Blantyre Street, Area 10/446, P.O Box 30883, Capital City, Lilongwe 3, Malawi