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Political Economy of Fertilizer Policy in Malawi

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Prepared for the Agricultural Policy and Statistics Team of the Bill & Melinda Gates Foundation

July 24, 2009

Introduction

Farmers in Sub-Saharan Africa (SSA) use less fertilizer than farmers in any other region in the world.[1] Low fertilizer use is one factor explaining the lag in agricultural productivity growth in Africa.[2] A variety of market interventions to increase fertilizer use have been attempted over the years, with limited success. Interventions fail typically due to (1) unsustainable, high fiscal and administrative costs, (2) insufficient government capacity to implement the program, and (3) programs being designed with a "one-size-fits-all" philosophy that fails to take into account farmers' local needs and constraints.[3] In the past several decades, Malawi has tried to alter that trend through a variety of innovative programs aimed at achieving national food security thru targeted input subsidy programs. The best known of these programs is Malawi's Starter Pack program.

The Starter Pack Programme was amended twice into the Targeted Inputs Programme (TIP) and Expanded Targeted Inputs Programme (ETIP), and eventually replaced with the Agricultural Input Subsidy Programme (AISP). The efficiency and equity of the Starter Pack program and its successors have been the subject of debate. This paper reviews the history, implementation, and perceived effectiveness of the various input subsidy schemes in the context of Malawi's political economy.

Background on Malawi

Poverty in Malawi is widespread.[4] In 2004, 52 percent of people lived below the poverty line, with 94 percent of them living in rural areas.[5,6] Malawi's economy is heavily dependent upon agriculture, which employs 78 percent of the national labor force.[7] In 2002, agricultural land was estimated at 49 percent.[8]

Table 1. Malawi at a Glance

Population (2007)	13.92 million
Percentage of population in rural areas (2005)[9]	83.2 (approx. 10.5 million)
Percentage of Population below poverty line (2004)	54
Total Area (2007)	1,185,000 sq km
Agricultural land (percent of total area 2005)	48.8
Percentage of farms under 2 hectares[10]	95
Average farm size[11]	0.8 ha
Important crops	Maize, groundnuts, tobacco, and tea
Percentage of fertilizer used by crop (1998)[12]	Maize – 64 Groundnuts – 9 Tobacco – 7

Source: World Development Report, 2008

Historically, distribution of landholding has been relatively unequal.

At the time of independence the commercially oriented estate sector was largely expatriate controlled and produced most of the countries exports (i.e. tea and tobacco).[13] The smallholder sector was subsistence oriented.[14] In Malawi, the term smallholder refers to small-scale agricultural producers whose land is held under traditional tenure rules. Estates denote larger agricultural operations and freehold or leasehold land.[15]

Smallholder farmers account for more than 75 percent of Malawi's agricultural production with Malawi's estates producing the rest.[16] More than 40 percent of smallholders have landholdings less than 0.5 ha.[17] The most important crop is maize, which is grown by 97 percent of farming households, and accounts for 60 percent of total calorie consumption.[18] However, maize is also one of the most input intensive crops, requiring

significant amounts of nutrients. Currently, maize consumes 64 percent of fertilizer used in Malawi (see Table 1). This need to increase fertilizer use in Malawi led the government of Malawi (GOM) in 1993 to begin a 5-year research project to create a list of "Best Bets" technology that could be employed.

The Starter Pack Initiative (and its TIP and ETIP amendments)

The Starter Pack program was designed to have 'universal coverage' for smallholder farmers when it was initiated at the start of the 1998/99 agricultural season. It was designed to subsidize maize production rather than be a general fertilizer subsidy with the regressive effect of disproportionately benefitting Malawi's estate sector.[19] In its first two years, the Starter Pack program was 'universal,' with every smallholder farmer receiving a pack. The pack consisted of 15 kg of fertilizer, 2 kg of hybrid maize seed, and 1 kg of legumes, enough for approximately 0.1 ha of land.[20,21] Starter Pack distributed 3 million packs a season.

The program was scaled down following the first two years. In response to pressure from the IMF and other donors for Malawi to obtain "fiscal austerity," the GOM tried to target only the poorest smallholders through the Targeted Inputs Programme (TIP) implemented in 2001.[22] Shortly after this shift, Malawi experienced a food crisis attributed to a combination of severe weather and fewer farmers receiving subsidized inputs. Therefore, in 2003 the TIP was expanded back to near-universal coverage and became known as the Extended Targeted Inputs Programme (ETIP).[23] From 1998-2000, the initial version of Starter Pack was credited with raising between 280,000-420,000 additional tons of maize annually; enough grain to end Malawi's food insecurity.[24]

Politics of Starter Pack

Several GOM fertilizer interventions predate the Starter Pack programme. Beginning in the early 1970s, the Agricultural Development and Marketing Corporation (ADMARC), a parastatal organization, distributed subsidized fertilizer and purchased grain at fixed prices similar to a cereal bank.[25] Due to liberalization efforts in the 1980s, and the rising administrative cost of the program, ADMARC was weakened, but did not dissolve. According to a 2000 survey, 61 percent of smallholder farmers purchased inputs from them, and ADMARC continues to compete with private distributors. Although another recent survey suggests the majority of farmers now purchase inputs from the private sector indicating a decline in ADMARC's market role.[26,27]

Before 1993, Malawi operated with a 'bimodal' agricultural strategy, with different and separate marketing and support systems for smallholder farmers and Malawi's estates. The estate sector used the private sector for inputs and outputs, whereas smallholders had to go through ADMARC in order to market their crops and purchase fertilizer.[28] Still, the subsidized fertilizer distributed by ADMARC primarily went to farmers with more than 2 ha of land. In addition, there was found to be a substantial leakage, roughly 25-30 percent, of ADMARC fertilizer going to the estate sector.[29] These programs primarily benefited the wealthier, estate owners and did not target the poorest smallholder farmers.

In 1993, following two decades of authoritarian leadership, Malawi voted for multi-party democracy, and elected Bakili Muluzi to the presidency. In 1998, toward the end of his first 5-year term, Muluzi needed to contemplate the political and social consequences of another food crisis for him and his party in the upcoming election. Muluzi may have also understood that Starter Pack, developed from Malawi's agricultural sectors "Best Bets" research, offered the GOM a way to both reduce the risk of food shortages and the corresponding political instability.[30]

The Ministry of Agriculture, led by Aleke Banda, was the principal actor in organizing Starter Pack, along with Harry Potter, DFID's Rural Livelihoods Adviser. They were strong supporters of forming a social safety net, and believed there was ample evidence behind the program. The benefits of Starter Pack resulted in strong GOM support at the highest levels, and from beneficiaries throughout the country.

While the Starter Pack was politically expedient, it caused great concern among some foreign donors. USAID, a principal donor, expressed concern over the politicization of the development project, as well as trepidation regarding potential beneficiary dependency, elimination of the private agricultural input market, and overall cost effectiveness.[31] Other donors, such as the World Bank and the IMF, had their own agendas and preferences for the kind of subsidy program Malawi should undertake.

Starter Pack Implementation

In 1998, the first year of implementation, a list of beneficiaries was written into village registers by local officials in order to distribute the agricultural subsidies. Packs were then sent to local distribution centers and handed out on the appointed day, with the beneficiary's name being called out. The beneficiary would then simply collect his/her pack. Roughly 3 million packs were distributed under this method. Starter Pack had a fixed cost around $20 million USD for 2.8 million beneficiaries.[32]

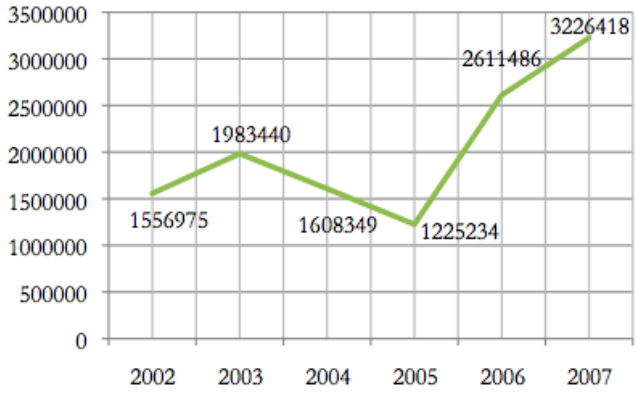
When the program was scaled back in 2001 to only 1.5 million smallholder households, a different implementation strategy was used in order to avoid complaints from those smallholders now left out of the program. Once again, local task forces compiled beneficiary lists. Next, the GOM's Logistics Unit printed a redeemable voucher for every beneficiary listed. Afterwards, Government procurement agents issued invitations to private suppliers to bid for the contracts.[33] The MoA, along with the Logistics Unit and international donors, evaluated bids and informed suppliers of awards.[34] The vouchers were handed out to beneficiaries before the distribution day, and on the appointed day, beneficiaries could go to the local store and receive their pack and extension pamphlet. Shortly after, store owners redeemed collected vouchers to the government for reimbursement.[35]

However, once the program was no longer universal, the Logistics Unit detected leaks in the system, with bags going to the wrong households and some beneficiaries' packs never arriving.[36] In response, the government tried to increase accountability by placing serial numbers that could be tracked on the vouchers, as well as increasing penalties for abuse by retailers and suppliers. Vouchers helped reduce commotion and improve security, but proved more susceptible to abuse. In 2002/03, when an estimated 2.1 million packs were distributed, it is estimated that 25 percent of distributed packs did not reach the intended smallholder household.[37] This leakage had an estimated cost of $ 3.7 million USD.[38]

The Impact of Starter Pack/TIP/ETIP

From the beginning, the GOM placed a large emphasis on monitoring and evaluation, even if in the end it was not particularly responsive to the findings. In 1999, the UK-based Statistical Services Centre (SSC) and Calibre Consultants were contracted by the Department for International Development (DFID)-Malawi to monitor and evaluate Starter Pack.[39] Every year, a food production and security survey was administered. The survey had national coverage, and was administered to 3000 households. Data collected from these surveys assisted government officials in responding to the 2001/02 food crisis by offering a better understanding of smallholder households' risk coping strategies.

Figure 1. Total Maize production in Malawi from 2002-07 (mT)



Source: FAOSTAT, 2008

The Starter Pack campaign, combined with good weather, is attributed with producing above average harvests of maize in 1998/1999 and 1999/2000. The Ministry of Agriculture estimated that Malawi produced 2.5 million tons of maize in 1998/1999 and 1999/2000.[40] The Ministry of Agriculture (MoA) estimated that Starter Pack contributed roughly one-quarter of the 1998/1999 harvest, and in the second year, contributed 15-30 percent of the 1999/2000 harvest.[41]

In the years following the food crisis in 2001/2002, maize production showed a positive trend (except for 2004/2005) with significant growth occurring in the 2006/2007 agricultural seasons (see Figure 1), coinciding with the implementation of a new input subsidy program. It is these subsequent agricultural seasons, from 2005 to the present that are the focus of the current debate.

Agricultural Input Subsidy Programme (AISP)

During the 2004 General Election campaign in Malawi, Bingu wa Mutharika made campaign promises to move the country toward implementing a general fertilizer subsidy for farmers and involve retailers more in the distribution efforts.[42] This received a lot of support from large farmholders, and from smallholders who had been left out of previous programs. Whereas Starter Pack had been targeted toward smallholder households and was seen by many as a subsidy on maize production, the Agricultural Input Subsidy Program (AISP) was seen by opponents to be a general fertilizer subsidy. AISP would no longer target the smallest of smallholders since the GOM felt that the 100 kg of fertilizer was too much to be effectively used by smallholder farmers.[43]

Due to droughts in 2004/2005, 5 million people required food aid. In response, the GOM sought to implement a "smart subsidy" to increase crop yields.[44] This provided a political opening for Mutharika to implement AISP. Aside from the food security aspects, this program was also established in part for the newly elected President, Mutharika, to gain distance from his predecessor, and claim his own role in supporting Malawi's national food security goals rather than continuing ETIP.

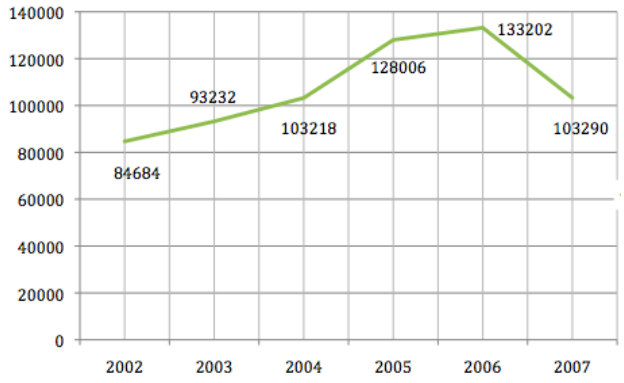
Implementation of AISP

Poor rainfall, late distribution of packs, and the limited scope of the ETIP program in 2004/2005, contributed to low national maize production in 2005 and widespread hunger (see Figure 1).[45] Due to the government's mishandling of ETIP, and the resulting mistrust by citizens, fertilizer distribution was now to be handled entirely by parastatal organizations, such as ADMARC.

The AISP subsidy was implemented through distributing coupons for different fertilizer types which recipients could then redeem at parastal outlets at approximately one-third the normal cash price.[46] Roughly 133,000 tons of subsidized fertilizer was sold in the 2005/2006 agricultural season, all by two organizations: ADMARC and the Smallholder Farmers Fertilizer Revolving Fund (SFFRM).[47,48] AISP was financed from the government budget with direct budgetary support at a cost of roughly $91 million USD.[49] The subsidy had serious ramifications for private sector fertilizer distributors, with most reporting a significant decline in sales. Despite these costs, the program ultimately did lead to increased harvest yields.[50]

Due to its initial success, AISP was renewed for the 2006/07 agricultural season. This time there was donor support from the international community, and more involvement by the private sector. Farmers now paid 28 percent of the fertilizer cost, with the government paying the rest.[51] Under AISP, over 3.5 million coupons were redeemed annually.

Figure 2. Total NPK Fertilizer Consumed in Malawi 2002-2007 (nutrient tons)



Source: FAOSTAT, 2008

Furthermore, the first two seasons showed significant yield increases: 2.6 million tons of maize in 2005/2006 and a staggering 3.2 million tons of maize in 2006/1007. Both of these yields are significantly higher than the 1.2 million tons realized in the 2004/05 agricultural season, reflected in Figure 1, though it must be noted that both of these seasons (2005-2007) were accompanied by above average rainfall, and therefore, not all gains can be attributed to the subsidy program.

Challenges facing fertilizer subsidy programs

Under the large AISP subsidy offered by the GOM, costs rise substantially with increasing fertilizer prices. According to Poulton & Dorward (2008), "A 70 percent government subsidy of the same fertilizer volume as in 2006/2007 would lead to an approximate 170 percent increase in the cost to government of subsidizing fertilizer, up to $160 million USD in 2008/2009 (more than 10 percent of the entire national budget) - only to deliver to farmers a subsidized price in 2008/2009

roughly the same as the unaffordable unsubsidized price in 2006/2007."[52]

In addition to the rising costs of providing the subsidy, evidence suggests that the AISP has harmed the private fertilizer sector. During the 2006/2007, it is estimated that between 30 and 40 percent of subsidized fertilizer purchases displaced commercial purchases instead of increasing total purchases.[53] There is little evidence of a net increase in overall fertilizer consumption, suggesting a transfer from private to parastatal suppliers rather than new consumer growth, and a transfer of government resources to the non-poor rather than smallholder farmers.

On the other hand, research suggests that the crowding out effect might be overstated, as private agricultural input suppliers were facing difficulties before any interventions began. Research suggests that most of the people who were given the Starter Packs would not have purchased them from the private sector because of widespread poverty, the high price of fertilizer, and the high transaction costs of reaching rural areas.[54] Targeting the subsidy to those with the greatest marginal benefit was shown to be an efficient and equitable way to improve crop yields in the short run, and create a market in the long run.

The logistics of these input subsidy programs have also posed serious challenges. Starter Pack entailed a relatively small bureaucracy when it operated as a "universal" program open to all smallholder households. With the subsequent Targeted Inputs Program (TIP), additional administrative positions were necessary to determine who would be eligible for the new program.[55] Community targeting efforts, while allowing communities to self-determine who was most in need, also required another layer of administrative support. The AISP bureaucracy has continued to grow, increasing overall administrative costs.

Many researchers also claim that Starter Pack and its successors need to be part of a complementary set of social programs designed to improve national food security. The lack of infrastructure, agricultural research, and weak extension services all undermine the overall impact of independent interventions. A country, on aggregate, may become "food secure," but food security will persist if individual households cannot grow enough to feed themselves or are unable to access the market.

Attributes	Starter Pack	TIP/ETIP	AISP
Years of Operation	1998-2000	2000-2005	2005-Present
Total Beneficiaries (est.)	2.8 million	1.5 million	3.5 million
Annual Cost (est. USD)	$20 million		$92 million
Target of Subsidy	Subsistence Producers	Subsistence Producers	Producers
Subsidy	100% of inputs for 0.1 ha	100% of inputs for 0.08 ha	60-90% of inputs for 0.4 ha
Fertilizer Volume Subsidized (tons)	42,000-44,000	11,000-50,000	130,000-220,000
Distribution Method	Physical distribution, then vouchers	Physical distribution, then vouchers	Vouchers
'Universal' Access for SHF	✓		✓
Attempts to reach poorest SHF	✓	✓	
Political benefits unstated	✓	✓	✓
Stated goal of national food self sufficiency			✓
Focus on staple crops	✓	✓	
Wide scale coverage	✓		✓
Parastatal input suppliers			✓
Private input suppliers	✓	✓	
Enforcement	✓	✓	✓

Critics suggest that "livelihood strategies" should be in place to coordinate social safety net programs.[56]

Table 2. Comparisons between Malawi's input subsidy programs from 1998-2008

Source: Levy, S et al. (2002, 2005); SOAS et al. (2008); Dorward, A. (2009)

The impact of AISP may have differed for those households that are net food buyers. The rapid rise in the cost of fertilizer due to a rise in oil prices in 2007/2008 contributed to a rapid rise in the domestic price of maize.

While high maize prices helped farmers with surplus maize sell at higher prices, these prices hurt the poor who were net consumers of maize; many of whom were already food insecure.[57] Even among net sellers of maize, some estimates suggest that the value of extra production gained from the fertilizer needs to be twice the cost of the fertilizer used in order for a farmer to breakeven and be compensated for risks taken.[58]

Conclusion

AISP, the most recent fertilizer subsidy program to be employed by the GOM, is credited with significantly increasing the yields of maize in Malawi. But there are serious challenges facing this most recent input subsidy.

First, the rising cost of the subsidy is seen as unsustainable, especially if oil prices climb again. Second, important equity and efficiency arguments can be made regarding benefit distribution and AISP's effect on the private input sector. Whereas the original Starter Pack was narrowly focused toward smallholder farmers, AISP makes no such distinction. Without targeting, critics contend that ASIP contributes to displacing purchases from the private sector, and neglects those for whom participation could produce the greatest marginal benefit. Lastly, implementation will be an ongoing struggle as bureaucracy increases, and corruption creeps in.

Please direct questions or comments about this research to the Evans Policy Applied Research (EPAR) PI, Leigh Anderson, at eparx@u.washington.edu.

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