

POLICY BRIEF IV

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Comparing FISP to Alternative Programs

By

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Policy Pointers

1. It is important to think of the FISP as a productivity enhancing program, and as such it may not be the best option for helping the most vulnerable households in Malawi.
2. Government should consider shifting some resources and effort away from FISP and toward cash transfer and cash for work programs that more directly benefit the most vulnerable households.
3. There is a need to officially coordinate the FISP and other social programs like MASAF.
4. Output price support programs mainly benefit wealthier surplus producing households. Malawi can draw lessons from Zambia, and should not increase maize purchases by ADMARC.
5. Consider piloting a flexible voucher scheme in a few areas. The system can help strengthen private input suppliers and provide flexibility for households to purchase the combination of inputs that they need most.
6. Long-run empirical evidence suggests that investments in programs such as agricultural research and development, education and roads have high payoffs. Malawi is currently hitting its NEPAD goal of investing 1 % of agricultural GDP in R&D. **Funding for these programs should continue to be scaled up, and should not be compromised by funding the FISP.**

Policy Summary

Malawi has made the Farm Input subsidy Program (FISP) the major pillar of both the country's agricultural development strategy and its social protection policies since 2005/06. Expenditure on the FISP has been high, ranging from 5.6% of the national budget in 2005/06 to 16.2% of the national budget in 2008/09. The general findings on FISP impacts are that the program has made a relatively small positive contribution to maize production and farm income. However, the program's impact on rural poverty remains unclear. These issues raise the need to understand how the benefits of the FISP compare to other possible forms of agricultural development and social protection programs in Malawi and elsewhere in Africa. It is impossible to say that input subsidies are unequivocally better or worse than other programs such as cash transfers or output price supports. The relative benefits of these programs depend on the structure of the economy, market conditions, and program design. With these considerations in mind we first compare the FISP with social protection programs and production enhancing programs. We then place the FISP within the overall context of public investments with long term payoffs. We conclude with recommendations for moving forward.

PART I: COMPARING THE FISP TO POTENTIAL ALTERNATIVE PROGRAMS

Figure 1 compares the alternative policy interventions that we compare with the FISP in this brief. These interventions are shown on a continuum of wealth status by intended beneficiaries. Each intervention may be the best option for a specific situation, and a specific group of households, but they all potentially compete for the same scarce public funds. Therefore, we compare the FISP side-by-side with them to the extent possible.

The FISP falls into the category of policies along with flexible input vouchers and output price support programs that should help people boost food production. However, due in part to FISP's high cost and substantial budget share many people expect that the FISP should be able to both increase food production and reduce household vulnerability to poverty and hunger. The ability of FISP to generate more food depends on how well recipient households use other input such as land, and labor along with outside factors such as weather. As a result, inputs subsidies work best for people who have enough available land, labor and live in areas with suitable rainfall to use the inputs effectively, but do not purchase these inputs on the commercial market.

In contrast to input subsidies that require sufficient complementary inputs, social protection programs like food aid, or cash transfer schemes provide money and/or food directly to recipients¹. These programs can help people survive shocks and smooth out their income and consumption. For example, cash for public work programs can create productive assets in communities, and can generate income and assets for households, particularly those with too little land to make farming a viable livelihood.

The population of households that can benefit most from input subsidies may be different from the population that can benefit from social protection programs. However, there may be some overlap because some households may have enough land and labor to have their vulnerability reduced by FISP. The potential overlap between input subsidies and cash transfers is illustrated in Figure 2, which is borrowed from Ellis (2009) and Ellis and Maliro (2013). If the two circles overlap completely then the FISP could be considered an adequate program to increase maize production and reduce vulnerability. The actual size of this overlap as it directly pertains to Malawi's FISP is not fully clear. However, given that uncertainty around the impact FISP has had on poverty reduction, there is need to recognize that the FISP likely cannot reduce poverty by itself, and complimentary programs that directly reduce household vulnerability are needed.

In terms of effectiveness, targeted cash transfers share many of the problems that one finds with targeted inputs subsidies (see Brief #3). These problems include greater participation by individuals who have connections to local leaders, and households "gaming the system" to appear more needy than they actually are (Conning and Kevane, 2002; Ellis and Maliro, 2013). However, one would expect that the administrative burden of distributing a cash transfer would be lower than the burden for distributing subsidized inputs.

Malawi has a targeted cash transfer and work program the Malawi Social Action Fund (MASAF) that has grown in scale but still remains significantly smaller than the FISP in terms of government expenditure.

¹ We do not devote significant space in this brief to comparing FISP to food aid, because our view is that the

latter should be used to help households in emergency situations such as drought or flooding.

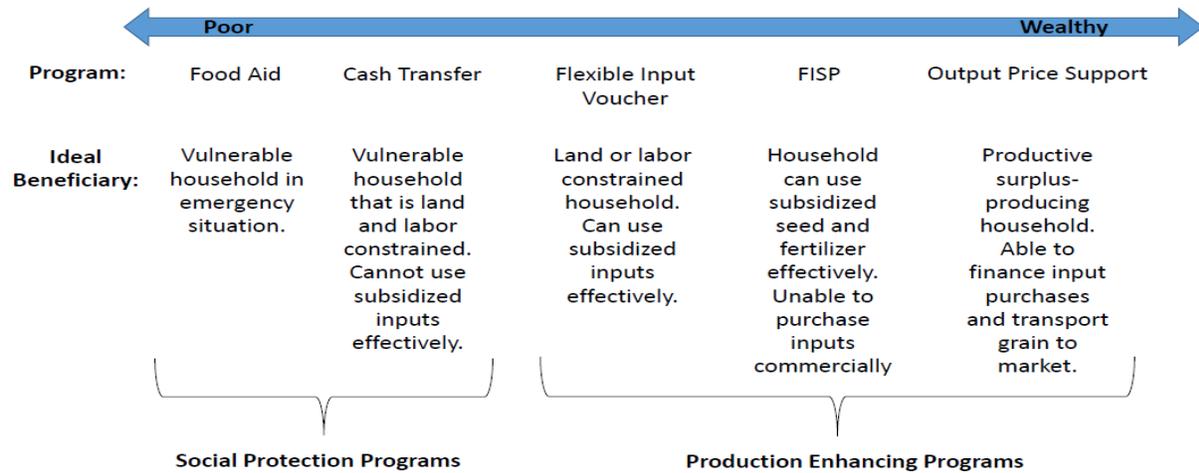


Figure 1: Continuum of Policy Interventions, by Wealth Status of Intended Beneficiary

Results from the MASAF indicate the following:

- i) 52 percent of public works beneficiaries have increased their income.
- ii) 10.9 percent of beneficiaries have been able to purchase household assets using public Works Program (PWP) cash earned.
- iii) 79 percent of Community Savings and Investment group members have generated income above 50 percent of the initial cash transfer they received.

With regard to improvements in food security:

- i) use of wages to meet basic food needs declined from 62 percent to 54 percent of public works (PW) beneficiaries.
- ii) 50 percent of savings and Investment group members indicated that they are no longer food insecure due to improvements in their financial status as a result of various income generating interventions the groups have engaged in (World Bank 2013).

The MASAF evaluation also showed that there has been improvements in household maize production as 34.6 percent (in 2011) and 30 percent (in 2012) PWSP beneficiaries spent their wages on farm inputs (maize seed and fertilizer); and 67 percent of PW beneficiaries also participated in the Fertilizer Subsidy Program (FISP). This demonstrates that the government needs to coordinate the FISP and the MASAF. While there may be potential complementarity

between the two programs for households who have sufficient land and labor, it is important to make sure that a situation is not occurring where one group of households receives benefits from both programs, while another group of households is not participating in either program.

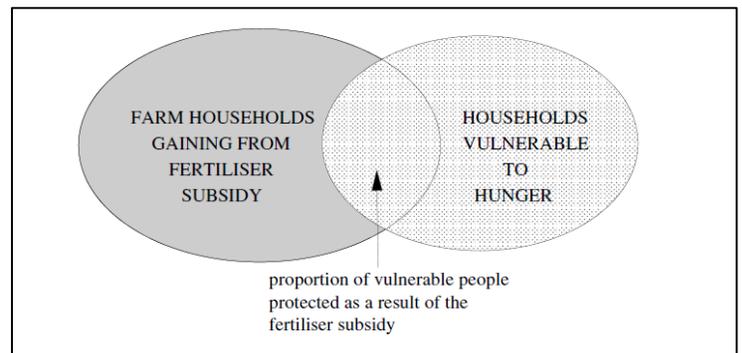


Figure 2: The Intersection of Input Subsidies and Vulnerability.

Source: Ellis, 2009; Ellis and Maliro, 2013

FISP vs. Productive Safety net programs

Since 2005 Ethiopia has implemented a large, integrated targeted safety net program called the Productive Safety Net Program (PSNP). The PSNP is embedded in the Ethiopian Government's strategy and policy for food security and eradication of extreme poverty, and represented a pivotal shift from annual emergency food aid appeals to a planned approach to food security and predictable drought risk management.

The PSNP provides food and/or cash transfers to food insecure households in chronically food insecure communities². Like the FISP, the PSNP selects beneficiaries based on a decentralized, community-based targeting system where a local committee decides who should receive the benefits. The program provides some long-term predictability by enrolling households for a five-year period. The public works component pays beneficiaries approximately US \$0.75 per day to work on labor-intensive community infrastructure projects during the dry season. These projects are designed to build community assets. The direct support component provides cash or food to households who do not have sufficient labor to participate in public works.

In addition, in its third phase, the PSNP was complimented by another program that provides productivity enhancing transfers such as credit, extension advice and irrigation to households with the goal of boosting agricultural productivity, just like Malawi's FISP. It is important to note that subsidized fertilizer is not part of the PSNP.

From a program design perspective, the PSNP in Ethiopia appears to be a more comprehensive program to reduce poverty than is Malawi's FISP, because the PSNP allows for the fact that some vulnerable households who are land and labor constrained need food and/or cash. In addition, some land constrained households who have labor can participate in public works, while others need extension and technology to boost production.

The initial impact assessments of the PSNP found mixed results (Gilligan et al. 2009). However, recent evidence suggests that the program has met its targets for being able to (i) reduce household food gap, (ii) increase caloric consumption, (iii) provide protection from distress sales of assets, and (iv) decrease in other negative coping behaviors (Debela et al. 2014; World Bank 2014). In addition evidence suggests that communities seem following the recommended guidelines for selecting beneficiaries. The PSNP also generally receives good marks for being well-targeted (Coll-Black et al., 2013).

From a transfer efficiency standpoint, the PSNP is a much more comprehensive program than the FISP offering both safety net and productivity enhancing aid other than subsidized fertilizer to farmers. Ethiopia's PSNP costs roughly \$150-200 million per year to reach approximately 7 million households, which translates to an administrative cost between \$21-\$29 per beneficiary. In contrast, the Malawi FISP costs roughly US \$150 million in 2012/13 to reach 1.5 million beneficiaries. Of that US \$135 million was spent on inputs. This translates to a cost of US \$90 per beneficiary. Therefore, one might reasonably conclude that the PSNP has a higher transfer efficiency than the FISP, as it is able to reach more people per dollar spent on the program.

While costs and benefits are difficult to directly compare across countries, Ethiopia's PSNP experience illustrates that Malawi may want shift some resources and effort away from subsidizing fertilizer and seed, and towards other productivity enhancing and safety net programs, that attach poverty and build resiliency in a more comprehensive manner. The five year commitment between the government and participants provides stability, and allows the participants to recognize that the program will last for a finite period of time.

FISP vs. flexible input voucher programs

The current design of the FISP can be considered inflexible in that all beneficiaries receive the same benefit in the form of 2 vouchers each good for 50 kilograms of fertilizer, and vouchers currently good for 5kg hybrid maize seed or 8kg composite maize seed.³ In contrast, flexible input voucher (FIV) have a certain cash value associated with them that allow recipients to redeem them at an input supplier for whatever combination of inputs best suits their needs. FIVs allow the government to recognize that 100 kilograms of fertilizer and 5-8 kilograms of maize seed may not be best for everyone, and that households know what is best for themselves. In addition, the FIV is a possible method to support and strengthen the private input distribution, wholesale and retail network in Malawi. An FIV

² Those households receiving food aid annually since prior to 2005.

³ There is also currently a separate legume voucher 2kgs groundnuts, beans or pigeon peas, or three kgs soya –

the legume voucher is flexible between legume types, but no longer flexible with maize.

system could be a step toward graduating from inputs subsidies in Malawi.

Unfortunately there is little evidence on the household-level impacts of FIV programs. To our knowledge the only study to evaluate FIVs is based on a pilot program in Zimbabwe, and it looks at their impacts on input suppliers and how effectively they reach recipient farmers (Mazvimavi, et al. 2013). The authors find that FIVs help retailers boost sales and revenue, and help link farmers to input suppliers. They find that FIVs work better in areas with good infrastructure and good cell phone reception. The authors also identify challenges associated with FIVs, including getting retailers to stock the full compliments of inputs that farmers may want. In addition, wholesalers face financial risks if all agro-inputs are not purchased.

There is currently insufficient evidence to recommend that Malawi move fully towards a FIV system. However, it may be worth piloting such a program in a few districts, to compare their impact against the current FISP system.

FISP vs. output price support programs

In addition to implementing an input subsidy program, in recent years the government of Zambia has scaled up maize purchases by its Food Reserve Agency (FRA) The Zambian FRA purchases maize from farmers at a pan-territorial price that is

consistently above the market price paid by private traders (Mason et al., 2014). The objective of the FRA purchase program is to provide farmers with an outlet to sell maize and procure maize for the country's strategic grain reserve. Evidence of the program's impacts suggest that increased FRA prices induce farmers to increase maize production, but this increase comes at the extensive margin through area expansion, and reduction in fallow land (Mason et al. 2014). Furthermore Mason et al. find that the increased prices resulting from the FRA program have regressive impacts. Most of the benefits from higher maize prices go to relatively better off farmers who have enough land to expand area under production, and have the ability to transport maize to the FRA depots for sale. In addition, poorer farmers with less land who do not produce enough maize to meet their needs for the year, are harmed by these higher prices when they have to purchase maize at market. The results in Mason et al. are consistent with Filipinski and Taylor (2012) who find that output price supports are a less effective policy instrument than input subsidies or cash transfers. Given that land constraints preclude most Malawian farmers from expanding area under production, we think it would be unwise for Malawi to follow Zambia's example by increasing ADMARC maize purchasing activities as a compliment to the FISP.

PART II: THE WAY FORWARD

FISP vs. Other Investments in the Long-Run

Finally, since we have argued that the FISP should be considered a production enhancing intervention, it is important to consider how the FISP compares with other investments such as irrigation subsidies, credit subsidies, agricultural research and development (R&D), education and road investment.

Fuglie and Rada (2013) compare rates of return for different forms of investment spending in SSA. They find that the benefit-cost ratio for national R&D spending in small countries like

Malawi is 1.6, while the ratio is 4.4 for large countries. In comparison the benefit-cost ratio for international CGIAR R&D is 6.2 across Africa (pg. 64). This compares to an estimate benefit-cost ratio for Malawi's FISP between 0.56 and 1.7 (see brief #2). Fuglie and Rada find that high returns also come from economic policy reforms, such as eliminating trade and macroeconomic policies that reduce farmers' earnings. The authors do not directly measure the impact of input subsidies but they state that low soil fertility in much of Africa could be suppressing productivity growth. These findings are generally consistent with other studies that find high rates of return to R&D (Alston et al. 2000). In terms of investment in agricultural R&D, Malawi is investing just above the goal of 1% of

agricultural GDP spend on R&D, as set out in the New Partnership for African Development. This is good and R&D funding should continue to be scaled up if possible. However, Malawi's level of R&D investment is still below the leading countries in Africa (Beintema and Gert-Jan 2013).

To our knowledge, the clearest example that compares the benefits and costs of input subsidies next to other types of investments is from India for the period 1960-2000. Table 1 is borrowed from Fan et al. (2008). It illustrates the Rupees produced per Rupee spent on different policies and investments over 40 years, broken down by decade. Table 1 suggests that during the initial decades, returns to subsidized fertilizer in India were relatively high. For example, 1 rupee spent on fertilizer subsidies returned 2.41 Rupees in the 1960's and 3.03 Rupees in the 1970's. However, these returns fell substantially over time to the point where the return from one Rupee spent on subsidizing fertilizer generated less than a 1 Rupee return in the 1980's and 1990's. The changes in

returns over time of fertilizer subsidies and other investments shows that payoffs to different interventions are not constant. Therefore, policy makers should be willing to change policies and development occurs and the needs of the country changes.

The other important message from Table 1 is that subsidies for fertilizer, irrigation and power almost always provided lower returns than subsidies for credit or investments in roads, education and agricultural R&D. The returns to agricultural R&D actually increased over time in India, possibly due to multiplier effects generated once a critical mass of scientists were trained and technologies were developed. Although the economic and policy contexts of contemporary Malawi and India between 1960 and 2000 are very different, the general conclusions from Table 1 are important to keep in mind when the government decides how to allocate scarce budget resources among competing uses.

Table 1: Returns in Ag Growth to Investments & Subsidies in India, 1960-2000

Returns to Ag. GDP Rupee produced /Rupee spent	1960's		1970's		1980's		1990's	
	Return	rank	Return	rank	Return	rank	Return	rank
Road investment	8.79	1	3.80	3	3.03	5	3.17	5
Education investment	5.97	2	7.88	1	3.88	3	1.53	3
Irrigation investment	2.65	5	2.10	5	3.61	4	1.41	4
Irrigation subsidies	2.24	7	1.22	7	2.28	6	NA	6
Fertilizer subsidies	2.41	6	3.03	4	0.88	8	0.53	8
Power subsidies	1.18	8	0.95	8	1.66	7	0.58	7
Credit subsidies	3.86	3	1.68	6	5.20	2	0.89	2
Agriculture R&D	3.12	4	5.90	2	6.95	1	6.93	1

Source: Fan et al. 2008.

Conclusions and Recommendations

Based on the findings in this brief, we conclude with the following recommendations:

- Recognize that the FISP is primarily a productivity enhancing program rather than a poverty or vulnerability reduction program.
- There is a need to do a better job analysing and understanding the different categories of farm households in Malawi. From there targeted interventions can be designed that are suitable to the different categories of famers.
- More appropriate interventions than the FISP should be designed to reach the landless and vulnerable who are dependent on agricultural activities and are farmers. Similar to Ethiopia's PSNP, such packages can be targeted, designed and linked with other social programs like MASAF.
- Take lesson from Zambia and recognize that output price support programs are regressive and mainly benefit wealthier surplus producing households. ADMARC should not be allowed to scale up maize purchases.
- Consider piloting a flexible voucher scheme in a few areas. The system can help strengthen private input suppliers and provide flexibility for

households to purchase the combination of inputs that they need most.

- The existing long-run empirical evidence suggests that investments in programs such as agricultural research and development, education and roads have higher payoffs than do input subsidies. Funding to these programs should not be compromised by the FISP.

References

- Alston, J.M., C. Chan-Kang, M.C. Marra, P.G. Pardey, T.J. Wyatt (2000). "A Meta-analysis of Rates of Return to Agricultural R & D: Ex Pede Herculem?" IFPRI Research Report 113. International Food Policy Research Institute. Washington D.C.
- Beintema, N. and S. Gert-Jan (2013) "Agricultural R&D: Is Africa Investing Enough?" Chapter 5 in IFPRI's 2013 Global Food Policy Report. International Food Policy Research Institute. Washington D.C.
http://www.ifpri.org/sites/default/files/publications/gfpr2013_ch05.pdf
- Coll-Black, S., D.O. Gilligan, J. Hoddinott, N. Kumar, A.S. Taffesse, and W. Wiseman (2013). "Targeting Food Security Interventions: The Case of Ethiopia's Productive Safety Net Program." ESSP Research Note 26. International Food Policy Research Institute, Washington D.C.
- Conning, J. and M. Kevane (2002) "Community-Based Targeting Mechanisms for Social Safety Nets: A Critical Review" *World Development* 30(3): 375-94.
- Debela, B. L., G. Shively and S. Holden (2014) "Does Ethiopia's Productive Safety Net Program Improve Child Nutrition?" CLTS Working Paper No. 1/2014. Centre for Land Tenure Studies, Norwegian University of Life Sciences, Ås, Norway.
- Ellis, F. (2009) "Fertilizer Subsidies and Social Cash Transfers: Complementary or competing instruments for reducing vulnerability to hunger?" *Frontiers of Social Protection Brief No.1*. Johannesburg: Regional Hunger and Vulnerability Programme.
- Ellis, F., and D. Maliro (2013) "Fertiliser Subsidies and Social Cash Transfers as Complementary or Competing Instruments for Reducing Vulnerability to Hunger: the Case of Malawi." *Development Policy Review* 31(5):575-596.
- Fan, S., A. Gulati, and S. Thorat (2008). "Investment, Subsidies, and Pro-Poor Growth in Rural India." *Agricultural Economics* 39(2): 163-170.
- Filipski, M. and J.E. Taylor. (2012). "A Simulation Impact Evaluation of Rural Income Transfers in Malawi and Ghana." *Journal of Development Effectiveness* 4(1):109-129.
- Fuglie, K., and N. Rada (2013) "Resources, Policies and Agricultural Productivity in Sub-Saharan Africa." Economic Research Report Number 145. USDA ERS. Washington D.C.
- Mason, N.M., T.S. Jayne, and R.J. Myers (2014). "Smallholder Supply Response to Marketing Board Activities in a Dual Channel Marketing System: The Case of Zambia." *Journal of Agricultural Economics* (forthcoming).
- Mazvimavi, K, C. Murendo, I. Minde, M. Kunzekweguta (2013). "Assessing the Impacts of Zimbabwe's Agricultural Vouchers Input Program." Paper presented at the African Association of Agricultural Economists Meeting in Hammamet, Tunisia; September 22-25.
- World Bank, Malawi (2013). Third Social Action Fund Project Documents. World Bank, Malawi.