Malawi Agricultural Inputs Subsidy: Evaluation of the 2007/08 and 2008/09 Program

Input Supply Sector Analysis

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January 2010

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List of Acronyms

ADMARC	Agricultural Development and Marketing Corporation
AISAM	Agricultural Input Suppliers Association of Malawi
AISP	Agricultural Input Subsidy Program
ARL	Agriculture Resources, Ltd.
CNFA/RUMARK	Citizens Network for Foreign Affairs/Rural Agricultural Marketing Program
EPA	
FW	Farmers World
GOM	Government of Malawi
ICRISAT	International Crops
LU	Logistics Unit
MAISP	Same as AISP with Malawi in front
MFA	Malawi Fertilizer Association
MFC	Malawi Fertilizer Company
MK	Malawi Kwacha
NASFAM	National Smallholder Farmers Association of Malawi
RAB	RAB Processors, Ltd.
SFFRFM	Smallholder Farmers'Fertilizer Revolving Fund of Malawi
STAM	Seed Trade Association of Malawi

1. Introduction

This report is one in a series of reports that evaluate the implementation and impacts of the 2007/08 and 2008/09 Malawi Agricultural Input Subsidy Program (MAISP). The focus of this report is the impact of the program on the structure and performance of the input supply sector, with particular attention to the contribution of the program to the development of commercial input supply for both seeds and fertilizers.

Chapter 2 provides a brief review of the 2006/07 MAISP evaluation findings concerning the input supply sector and recommendations for improvements in the program that were made by actors in the sector. Chapter 3 introduces the 2007/08 and 2008/09 programs, focusing on how the overall program design for each year differed from the 2006/07 design and the impact that these changes had on the overall structure of the input supply sector. Chapter 4 describes the data collection and analysis methods used to assess impacts on the sector and problems encountered in implementing the study. Chapters 5 – 7 are the analytical kernel of this report: chapter 5 examines the evolution of retail input supply enterprises over three years from 2006/7; chapter 6 focuses on the seed program and impacts; chapter 7 the fertilizer program. The following topics are addressed in the analytical chapters: competition in the sector; impacts on costs, cash-flow and profits; private sector confidence in the sector; prevalence and magnitude of voucher implementation problems experienced by retailers. Chapter 8 ends the report with a summary of key findings and recommendations for improvements.

2. The 2006/07 Malawi Agricultural Input Subsidy Program Evaluation

The 2006/07 evaluation examined the impact of MAISP on the input supply sector, with particular attention to the program's contribution to the development of private sector input supply systems, drawing on extensive interviews with input suppliers (i.e., fertilizer importers and distributors and seed manufacturers) and a survey of retailers (i.e., independent agro-dealers, managers of distributor retail outlets such as RAB and Farmers' World, and government-run ADMARC and SFFRFM outlets). Section 6 of the overall 2006/07 evaluation report presented a synthesis of the views of this diverse set of actors and their recommendations for improvements in the program.

In general, the actors interviewed were positive about the program. For fertilizer suppliers, the key accomplishment in 2006/7 was the inclusion of private sector suppliers in the program after a year (2005/06) of having been totally excluded and left with large, expensive carry-over stocks at the end of the 2005/6 season. For seed suppliers, the introduction of the maize seed voucher was considered a major step forward in terms of helping Malawian farmers access more productive varieties and helping seed companies build demand for their products. The views of the strengths and weaknesses of the 2006/07 program as synthesized from data collected through interviews with fertilizer importers and distributors, seed company managers, and representatives of the fertilizer and seed suppliers' professional organizations are summarized in Box 1.1.

Box 1.1 Supplier views on strengths and weaknesses of the 2006/7 voucher program

Strengths	Weaknesses
• *Very efficient Logistics Unit operations* • *Private sector was empowered* • *Constructive government, donor, private sector dialogue began* • *Use of government infrastructure to complement private sector* • *Payment for fertilizer vouchers was timely, at least at the beginning* • *Seed program left choice to farmers* • *Seed program presented marketing opportunity to private sector* • *Poor farmers were helped* • *Most input suppliers and retailers had better sales this year than last year*	• *VERY late design and implementation* • *Poor tendering process (started early but then canceled); second round lacked transparency* • *Poor voucher design led to fraud and vouchers not honored by Logistics Unit* • *Low redemption value for fertilizer vouchers (especially for remote locations)* • *MK rather than US$ redemption value increases supplier risk* • *Slow voucher processing by ADMARC/SFFRFM jeopardizes cash flow for seed sector* • *Weak institutions for monitoring product quality* • *Information campaign gave too much attention to fertilizer and did not provide clear understanding of who should get vouchers* • *In some cases voucher sales are simply replacing commercial sales rather than adding to them.*

At the procurement level, suppliers supported the voucher program, but continued to stress that stability in the broad design features and implementation characteristics of the program is much more important to their performance than the type of program itself. Stability (and hence predictability) in the program characteristics over several years should reduce the amount of annual planning and consultation needed, ensure early announcements of tenders, and enable efficient, low-cost procurement. Common recommendations for addressing the weaknesses in the 2006/7 program offered by informants at the procurement and supply level included:

- Using the more flexible seed voucher approach for both seed and fertilizer;
- Improving voucher distribution so that it is earlier (June/July when cash is available from sales of other crops) and the control is in the hands of agricultural staff and Village Development Committees;
- Reducing ADMARC/SFFRFM share of the market (in a reasoned and predictable manner) and using saved resources to improve the quality of their services;
- Monitoring product quality (and increasing sanctions for violations) through joint action by professional organizations and government;
- Expanding the agrodealer network while insisting on registration to maintain quality controls;
- Sustaining maize prices through programs that will increase price stability (including research and incentives for development of maize processing industries).

At the retail level, there were a large range of implementation problems encountered (stock outages, long lines, delayed voucher reimbursement, etc.). Strong views were expressed by retailers about the inadequacy of the coupon distribution program and what could be done to improve it. Only 9% suggested that the distribution system continue as it was conducted in 2006/07. Fifty-five percent of retailers suggested that different actors than were involved in 2006/07 needed to be given the responsibility for coupon distribution in the future, but there was no consensus concerning the appropriate actors. In response to a question about what could be done to improve the physical supply of inputs, the most common responses were better timing (28%) and better mix of products (13%). Some thought the system was satisfactory as is (11%) and 12% offered no suggestion.

Despite the implementation weaknesses most actors believed that the general concept of an input subsidy administered through the use of vouchers redeemable at both public and private input shops was a good one. Very few respondents to the retailer survey (10%) suggested that the program be ended or that the government go back to one of the earlier models (TIP, Starter Pack). Reasons for not wanting to continue with the voucher program included corruption, a perception that few were benefiting, and its having had a negative impact on their sales. Those wanting to continue the program offered a wide variety of reasons that are difficult to summarize; the most common included:

- It assists the poor (27%)
- It promotes hybrids (8%)
- It assists small farmers (7%)
- It reduces hunger and increases yields (6% each)
- It increases business (5%)

We present this synthesis of input sector views about the 2006/07 subsidy program as a jumping off point for reviewing how well the 2007/08 and 2008/09 programs responded to these recommendations put forward by key actors in the 2006/07 program.

3. Salient characteristics of the 2007/08 and 2008/09 AISP

3.1 2007/08

The 2007/08 program design was similar to that of 2006/07 with minor modifications (LU final report, April 2008).

The year-to-year similarities affecting the input supply component included:

- Selected farmers throughout the country received vouchers that could be exchanged for fertiliser and seed when surrendering the voucher plus a cash “top up” of 950 MK for fertilizer and a variable amount not to exceed 90 MK for hybrid seeds.
- The Government issued a tender for the purchase of fertiliser to be delivered to one of three SFFRFM regional depots, from which Government (through a tender process) would arrange transport to ADMARC and SFFRFM unit markets where farmers could make their voucher purchases

- In addition a number of known agriculture inputs retailers with rural outlets were authorised to accept the vouchers together with the cash “top up” in exchange for fertiliser (and/or seed) supplied by these retailers
- The provision of seed to the farmers was the responsibility of recognised seed growers (Pannar, Monsanto, Seed Co, Demeter, Funwe plus the AISAM agrodealer network) who stocked rural outlets at which the farmers could obtain the seed when surrendering the voucher plus a cash “top up”.

The year-to-year differences affecting input suppliers included:

- The farmer’s contribution to the cost of the fertiliser provided was reduced from MK 950 per 50 kg bag (2006/07) to MK 900 per 50 kg bag (2007/2008)
- In an attempt to encourage expansion of private sector involvement in more remote rural area, the Government agreed to pay an incentive bonus in selected EPAs for NPK and urea vouchers surrendered from these EPAs. The amount paid was MK 100 or MK 200 on top of the district value of the voucher depending on the EPA.
- Retailers were authorized to request a top-up not to exceed 90 MK/voucher for hybrid seed voucher redemption (there were no seed voucher top-ups in 2006/07). Since the amount of “top up” was determined by suppliers, it could vary and was therefore the cause of some confusion and resentment on the part of farmers.
- Flexible vouchers, which could be surrendered in exchange for a variety of seed types namely cotton, beans, soya, groundnuts or maize, were introduced.
- At the end of the programme (December/January) cotton chemical vouchers were introduced (these were not covered by our input supplier assessment).

The “remoteness” premium did encourage some private sector actors to deliver to more remote locations than they had the previous year. This was accomplished via direct deliveries to temporary distribution points and/or agreements with independent agrodealers who acted as agents for the distributor. There is no evidence that the program led to any permanent changes in the structure of the distribution networks in the more remote areas.

The introduction of the flexi-voucher stimulated some interest in the development of seed supply for alternative crops, but most flexi-vouchers were used for maize. It is not clear if this was by preference or because of limited supplies of alternative seeds.

The major challenge emanating from the program changes was due to confusion over the top-up for the hybrid seed vouchers. This resulted in major disruption of sales by the private sector and unwarranted accusations of illegal practices. It created serious problems for many independent agrodealers and the networks supporting them. Retailers who had praised the 2006/07 program as having helped them expand their businesses faced low, sometimes non-existent, sales in 2007/08 due to farmers’ misunderstandings about seed voucher pricing policies and an ADMARC/SFFRFM decision to not implement the authorized top-up for their shops. This Government decision forced all retailers to sell at the lower, face value of the voucher or risk not moving their stocks.

Many retailers who had initially posted the higher (authorized) prices, were stigmatized and unable to sell their stocks at all (see Chapter 6 for a detailed discussion of the issue).

3.2 2008/09

The 2008/09 AISP was implemented during a presidential campaign. As a result, it was subject to intense scrutiny by opposition party candidates and decisions about voucher numbers and distribution appear to have been even more heavily influenced by political considerations than observed during the two earlier AISP evaluations, with widespread accusations of politicians having obtained access to vouchers. The extent to which politics influenced decisions about the overall program design is not clear. The following program elements were fairly consistent with earlier years: (LU final report, April 2009):

- Selected farmers throughout the country received fertiliser vouchers that could be exchanged for fertiliser when surrendering the voucher plus a cash "top up" (of MK 800, down from 900 MK the previous year).
- The Government issued a tender for the purchase of fertiliser to be delivered to one of three SFFRFM regional depots, from which Government (through a tender process) would arrange transport to ADMARC and SFFRFM unit markets where farmers could make their voucher purchases.
- Selected farmers also received a seed voucher that could be exchanged for a seed package.
- The provision of seed to the farmers was the responsibility of recognised seed growers (eight in number: Pannar, Monsanto, Seed Co, Demeter, Funwe, AISAM, Cargill, Great Lakes) who undertook to stock both ADMARC/SFFRFM unit markets and rural agrodealer outlets where the farmers could obtain the seed when surrendering the voucher.
- Flexi-vouchers were also distributed to selected farmers. These could be surrendered in exchange for a variety of seed types namely cotton, beans, pigeon peas, groundnuts or maize.
- Towards the end of the programme (December/January) cotton chemical vouchers were introduced (once again, our assessment does not address this topic).

But 2008/09 brought with it a change that had major implications for the structure and performance of the fertilizer sector's retail distribution system. No agriculture inputs retailers with rural outlets were authorised to accept the fertiliser vouchers in exchange for fertiliser; only ADMARC and SFFRFM were authorized to redeem fertilizer vouchers.

Initially, the various work plans for the 2008/2009 subsidy programme had included private retailers and as late as mid-October 2008 contracts had been issued to selected retailers. However these were withdrawn and on November 6^{th}, 2008 an announcement was made that the agents for sales of fertiliser through the subsidy scheme would be ADMARC and SFFRFM only (LU report and author's interviews).

This decision was announced very late, and in many cases only after fertilizer distributors had already received draft contracts from the GOM authorizing them to redeem vouchers and specifying quantities. The decision and reasons behind it are discussed further in Section 7.1.

The impact of the GOM decision to exclude the private sector from retail distribution of fertilizer is complex. The decision had immediate implications for the conduct of this evaluation, particularly increased difficulty in getting quantitative information from the private sector. Some felt that their exclusion removed any obligation they previously had to provide the detailed purchase and sales data requested by the evaluation team). The decision also had government budget and cost implications for the subsidy program to the extent that ADMARC/SFFRFM costs are increased by over-extending their infrastructure and staff (we are unable to demonstrate this, given lack of availability of information on the ADMARC cost structure). Although difficult to quantify with precision, the decision may have contributed to reported farmer experiences of long lines at ADMARC/SFFRFM retail outlets, stock outages that could not be compensated for by private sector actors and, in the absence of private sector competition, and increased incentives for ADMARC/SFFRFM staff to request "tips" for services that should be free.

The community survey conducted in 2008/09 provides some data on the tip issue. The survey interviewed community leaders for each of the 86 enumeration units where the household survey was conducted. The community interviews were conducted in a group setting. After the group identified the principal retail outlets frequented by members of the community for redeeming their 2008/09 vouchers, interviewers asked a series of questions about the performance of the different outlets. One of those questions was about whether farmers felt obliged to pay tips at the different outlets in order to get served. Table 3.1 summarizes the responses.

Table 3.1 Frequency of paying tips at outlets commonly used for redeeming coupons, 2008/09, all regions

	ADMARC	SFFRFM	Private Company	Small Trader
Never	42.2%	25.8%	47.1%	100%
Seldom	15.7%	25.8%	11.8%	0%
Often	42.2%	48.4%	41.2%	0%

Source: Community survey

Since these responses are for 2008/09, the private sector responses apply exclusively to seed coupons while the government outlet responses apply to both seed and fertilizer coupons. While the share of communities saying "often" for each type of supplier is approximately the same (41-48%), the higher rate of "never" responses for small traders, the private sector, and ADMARC compared to the relatively low rate of "never" for SFFRFM, may signal a problem that needs to be addressed by SFFRFM in particular. There were only two communities responding to this question for small traders, but in both cases no tips were paid. When comparing results for government (ADMARC and SFFRFM combined) and the private sector (Private companies and small traders combined), differences were not statistically significant. The fact that just under half of all the communities interviewed felt that tipping was a common occurrence is disturbing, as farmers end up paying more for their inputs than what they should be paying and obviously the poorer farmers without cash reserves are less well served than those with cash. We looked at these responses by region, but found no statistically significant variation across regions.

In the longer term (perhaps only a year or two), the decision to exclude the private sector from fertilizer sales may also lead to major structural changes in rural retailing in Malawi. Many of the fertilizer distributors maintain retail outlets which supply farmers with a wide range of food products, hardware, and farm equipment while also buying crops from farmers; the financial viability of these outlets in the absence of profit from fertilizer sales appears to be in question (see Chapter 7 for more discussion).

Changes in the seed program for 2008/09 were minor and focused on addressing some of the confusion associated with top-ups during the 2007/08 season:

- Both types of seed voucher (maize and flexi-vouchers) carried a value of MK 680 when exchanged for seed—top-ups were officially eliminated from the start of the season.

The continuation of the flexi-voucher program led to some structural change in the seed sector with AISAM establishing itself as a registered legume seed producer (with assistance from ICRISAT in obtaining the base seed) and becoming an official member of STAM (Seed Trade Association of Malawi). Flexi-voucher use for non-maize seed products remained very low, however (about 350 tons).

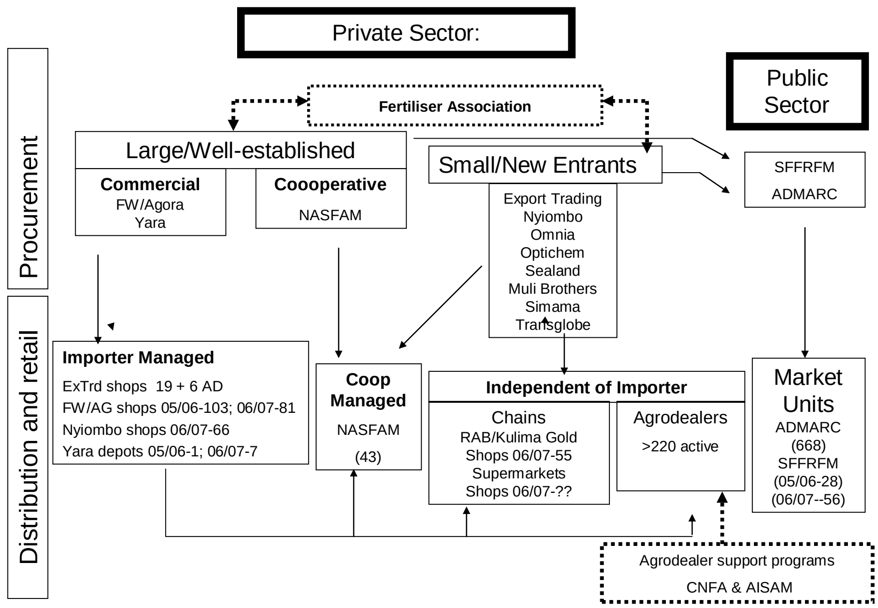
3.3 Size and structure of the input sector

Figures 3.1 and 3.2 show the salient structural characteristics of the fertilizer and seed sectors as described in our 2006/07 input sector assessment. The figures identify the key actors involved at that time and the vertical and horizontal relationships among them. At the procurement level, there were a dozen actors in the fertilizer sector and half that many for seed. At the retail level, many of the same actors are present in both the seed and fertilizer diagrams.

In addition to the business enterprises, there are a number of professional associations. The Fertilizer Association and the Seed Trade Association were newly created in 2006/07. Each association's aim is to improve professionalism in the sector and to represent their members in policy discussions with the GOM. The CNFA/RUMARK and AISAM networks of agrodealers were the result of donor-funded projects created to build a more vibrant private sector supply system. These networks focus on the retail level, offering business management and product training, credit guarantees (CNFA only), and periodic reports on market conditions for agrodealers selling fertilizer, seed, or agricultural chemicals. The NASFAM network of farmer cooperatives supplied inputs to members on a strictly commercial basis, but member cooperatives also benefit from donor funding that provides training and business management support.

Government participation in the market—at both procurement and distribution levels—has been highly variable from year to year, depending on decisions about input support programs. A strength of the government network is its ownership of 56 SFFRFM depots (up from 28 in 2005/06) and 666 ADMARC market units throughout the country (ADMARC reported 362 permanent depots in 2001), which serve as welcome input distribution or sales points for many farmers who are not served adequately by the private sector.

Figure 1 Structure of the Malawi Fertiliser Industry

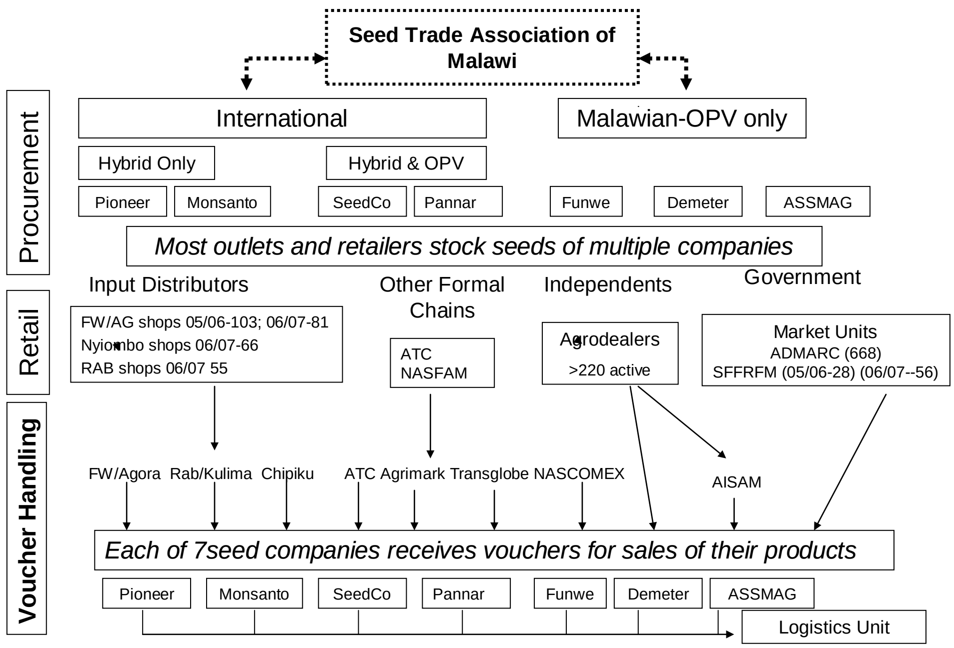


Between 2006/07 and 2008/09, we note the following major changes in the configuration of the fertilizer supply sector.

- NASFAM has withdrawn almost entirely from fertilizer supply as it struggles to keep its cooperatives running in the face of serious reductions in donor support.
- RAB has withdrawn almost entirely from fertilizer sales due to uncertainty about Government's intentions.
- Yara closed down its international representation in Malawi, turning over an exclusive right to import Yara fertilizers to ARL.
- Other international representations are likely to follow in Yara's footsteps if the GOM continues to exclude the private sector from retail sales (the view is that one does not need a local representation to supply government only).
- A relatively large number of "newcomers" have added their names to the rosters of companies bidding on GOM contracts for fertilizer imports.
- FW/Agora/MFC all continue operations, but have had a substantially reduced share of the overall import market since 2006/07.
- The fertilizer retail sector is highly volatile with multiple entries and exits each year; those who are surviving tend to supply niche markets that do not rely on subsidy fertilizer (dimba season production, estate sector, sales of fertilizer in quantities less than 50 kg).
- The MFA has found it increasingly difficult to maintain cohesion among its members as the number of players in the sector (some very temporary and opportunistic) increases and GOM policies become less predictable. There

appears to be some tension between members who have invested heavily in the development of retail networks and those who restrict their activities to spot importing when the market is advantageous—a natural development given their different interests.

Figure 2 Structure of the Malawi Seed Industry



In contrast to the fertilizer sector, the seed sector seems to have benefited from the subsidy program. The STAM continues to grow and has had some success in dealing with seed quality and classification issues as well as with supplier-GOM-donor negotiations about the redemption value of seed vouchers. The distributor networks that were unable to sell fertilizers in 2008/09 (e.g., RAB, FW, Agora) were active in seed supply and plan to continue with this activity. As the subsidy program expands to support legume seeds, new seed firms have been created. The one challenging area is that many of the agrodealers who were unable to sell seed at anticipated prices in 2007/08 because of confusion over the voucher top-up have withdrawn from seed sales, in large part because AISAM, which was acting as a conduit between them and the seed companies authorized to redeem vouchers, has been forced to cut back their operations because of losses during 2007/08.

It is important to stress that at the retail level independent agrodealers and distributors outlets tend to be multipurpose shops which carry a multitude of products. For example, among the independent agrodealers interviewed about their maize seed sales, only 66% declared maize seed as their primary source of income. Other products sold by this group include fertilizers (60%), legume seed (24%), vegetable seeds (55%), herbicides (45%), grain storage products (46%), agricultural equipment (36%), groceries (46%), hardware (23%), and clothing and housewares (20%). The large distributors such as RAB, Agora, and Farmers' World tend to carry a similar range of products, but often with greater variety and larger stocks in each outlet. While agricultural inputs represent a principal source of income for most retail distributor and agrodealer outlets, the seasonality of these products is such that product diversification is necessary for year-round overall profitability. In addition, the distributor outlets and a few agrodealers purchase maize and other crops from farmers.

4. Methods used in assessing impacts on the input supply sector

Information used in the analyses of input sector impacts for 2007/08 and 2008/09 comes from (1) Logistic Unit reports on Malawi's input sector; (2) key informant interviews with major fertilizer importers, major seed producers and importers, and representatives of input supplier organizations; (3) a survey of 230 retail outlets and (4) focus group discussions with farmer groups, and (5) group interviews with community leaders.

For consistency, and to improve our ability to look at changes in the provision of retail services over time, we decided to interview the same sample of retailers covered in our 2006/07 assessment. Details of the original sample selection are presented in the 2006/07 evaluation report and will not be repeated here. Approximately 65% of retailers interviewed in 2007 were located and re-interviewed, with others either not available for the interview (some operate only during the peak input season and had already closed their shops) or no longer in the input business. Eighty-one new retailers were added to the survey as replacements, but we were unable to get the sample size up to the 2006/07 level of 271. Substantially more retailers interviewed in 2007 dropped out of the sample in the North and Center than in the South.

Table 4.1 provides some general population and cropping information on the six districts covered, the number of retail outlets per district identified in the initial sampling frame, the number of outlets interviewed in 2006/07, the number interviewed in 2008/09, and a qualitative indicator of the density of the retailer coverage by district.

The important point to retain about the sample is that it covers six purposively selected districts and therefore does not permit us to generalize the results to all districts in the country. What it provides is a snapshot of program impacts on retailers in these six districts where farmers have relatively high levels of access to input vouchers.

Most of our analyses look at the impacts by region and/or type of actor, with a focus on the following groups:

- Importers with distribution networks (e.g., Farmers World/Agora, RAB[1], Export Trading, Nyiombo)
- Importers with small or no distribution networks (e.g., Yara, Optichem, Optima, Sealand, Simama, Muli Brothers)
- Farmer cooperatives (NASFAM affiliates and a few independent cooperatives)
- Independent agro-dealers
- Government distributors (ADMARC/SFFRFM)

[1] Strictly speaking, RAB does not import but orders through others such as Yara. Given its extensive network of retail outlets it fits better in this category than elsewhere.

Table 4.1 Geographic distribution of retailers surveyed

Region	District	Sampling Frame (outlets in 2006/07)	Sample size 2006/07-2008/09	Retailer Density in District	District population	Population density per sq. km*	Percent crop area in Maize & Tobacco
North	Mzimba	132	50 / 39	High	524,014	from 25-50 in se to 50-100 in w;	M: 50-75% T: 10-25%
	Rumphi	44	41 / 34	Low	128,360	50-100	M: 50-75% T: 10-25%
Center	Kasungu	78	50 / 38	Medium	480,659	50-100	M50-75% T 10-25% n.; 5-10% s.
	Lilongwe	140	50 / 41	High	905,889**	200-400	M: 50-75% T: 10-25% nw
South	Blantyre	51	38 / 45	High	307,344**	400-800	M:50-75%
	Machinga	52	42 / 33	Low	369,614	2/3 of area 50-100; 1/3 100-200	M:25-50% with some 50-75% in n.

*Excluding national park areas. **Rural population.
Source: Compiled from sample data and the Malawi Atlas of Social Statistics (IFPRI, 2002).

In 2006/07, we over-sampled agrodealers because they tend to be a very heterogeneous group[2] and under-sampled ADMARC/SFFRFM outlets because they tend to be more homogeneous given their centralized management structure. We were not able to do this as much during the 2009 survey because there were fewer agrodealers that could be located. Table 4.2 compares the composition of the two samples (2007 vs 2009) by type of retailer, illustrating that the share of independent agrodealers and cooperatives in the sample declined from almost 50% in 2006/07 to just under 40% in 2008/09 while the share of distributor and government outlets increased. These changes must be interpreted with care. The increased number of distributors in the 2009 sample does NOT mean that the actual number of distributors in the population of retailers increased between the two years; it is rather a reflection of the fact that the actual and the relative number of agrodealers and cooperatives decreased, forcing the interview team to sample more distributors as replacements to maintain a reasonable total sample size. The increase in the number of distributor outlets sampled between 2007 and 2009 is a result of the timing of the 2009 survey (about a month later than the 2007 one) and an apparent decline in the number of agrodealers. The survey team was instructed to replace any 2007 interviewees who could not be located with interviewees in the same category (i.e., agrodealers with agrodealers, distributors with distributors). Given the large number of agrodealers who could not be located (some because they had gone out of the input business, some because they were temporary shops and closed for the season), the team was unable to

[2] Over-sampling heterogeneous groups helps to get a better picture of general tendencies within the group whereas too few observations increases the risk of selecting atypical cases that may result in an inaccurate picture of the overall group's characteristics.

find a full set of replacements for the agrodealer category. When this happened, they looked for alternative types of outlets such as the distributors, most of these outlets existed in 2007 but were not interviewed. Because we did not have resources to do a full census of input retailers in these districts, we do not know if the change in numbers and shares for our sample reflects actual changes in the population of input retailers.

Table 4.2 Composition of retailer sample by district and type of retailer

Region	District	Distributors 2007 vs 09	ADMARC/ SFFRFM 2007 vs 09	Coops 2007 vs 09	Independent agrodealers 2007 vs 09
North	Mzimba	10 - 21	5 - 6	4 - 2	31 - 10
	Rumphi	2 – 6	24 - 20	6 - 2	8 - 6
Center	Kasungu	14 - 16	8 - 6	4 - 2	24 -14
	Lilongwe	10 - 11	6 - 5	7 - 3	27 -22
South	Blantyre	5 – 5	15 - 16	0 - 1	22 - 23
	Machinga	6 – 7	13 - 12	0 - 0	19 - 14
TOTAL	Number	47 - 66	71 - 65	21 - 10	131 - 89
	Percent	17 - 29	26 - 28	8 - 4	49 - 39

Source: Retailer survey.

Of the 230 retailers interviewed, 172 (75%) sell inputs year-round; 54 (24%) only during the rainy season, and 4 (2%) on an infrequent basis. Eighty-two percent of distributors and 76% of agrodealers sell year-round while only 65% of government outlets do, illustrating the important role that private sector distributors play in supplying inputs during the increasingly important dimba season.

Our assessment of the 2007/08 and 2008/09 season looks at selected indicators of retailer performance that were used in the 2006/07 survey: sales trends, income trends, numbers of firms entering or exiting the sector, investment, development of new services, and perceptions of the impact of the subsidy program on these indicators.

We also report some results from the interviews with community leaders representing the 86 communities in which the household survey was conducted. The leaders were asked about changes in the number and types of retail supply outlets used by farmers in the community and about the prevalence of different types of problems encountered when farmers redeemed their vouchers. In some cases, the results of the community survey differ from the results of the retailer survey. This is a logical outcome of the different sampling methods used. The community survey results should be viewed as broadly representative of the situation facing farmers throughout the country. While the retail survey results cannot be generalized nationwide, they provide more detail on what is happening to different types of retailers in the six districts covered and are therefore very useful in terms of understanding the AISP impacts on the retail network in these districts.

5. Evolution of retail input supply enterprises from 2006/07 to 2008/09

Although the primary objective of AISP is to improve food security by assisting farmers to increase yields and incomes, a secondary objective is to build a reliable input distribution system with an appropriate mix of government and private sector services. In this section we look at the activity mix and growth of input suppliers in our sample by category of supplier. When appropriate, differences across districts are also highlighted.

5.1 Importance of maize seed and fertilizers in enterprises interviewed

A series of retrospective questions posed to the 2008/09 sample of retailers suggests that during the past three years, there has been a steady reduction in private sector participation in both maize seed and fertilizer marketing—the two inputs at the center of the subsidy program (Table 5.1). First, we note that the number of input retailers selling neither fertilizer nor maize has doubled during the period covered (from 9 retailers to 18). Those selling neither are predominantly independent agrodealers (77-78% in 2006/07 and 2007/08, but increasing to 89% in 2008/09). There has been a tendency for the number of retailers selling just one of these two target products to increase over time while the number selling both declines. Most of the changes are accounted for by independent agrodealers and cooperatives; however a few distributor shops also stopped selling one or the other product.

Table 5.1 Number of sample retailers selling maize seed and/or fertilizer by year

	Maize seed sales but not fertilizers	Fertilizer sales but no maize seed sales	Both fertilizer and maize seed sales	Neither fertilizer nor maize seed sales
2006/07	29	9	183	9
2007/08	33	11	173	13
2008/09	36	14	162	18
2008/09 as % of 2006/07	124%	156%	89%	200%

Source: Retailer survey, 2008/09.
Note: Most retailers interviewed sell a range of products including other inputs (e.g., chemicals), hardware, clothing, etc. so those who sell neither fertilizers nor maize seeds are likely selling crop chemicals and other non-agricultural products.

Fifty-three percent of retailers not selling fertilizers in 2006/07 attributed the decision to the fertilizer subsidy program; this number declined to 46% in 2007/08 and rose to 57% in 2008/09. In other words, about 50% of decisions made to NOT sell fertilizer are influenced strongly by the subsidy program. Other reasons given were related to general business strategies (“have never sold fertilizers”) or access problems (“couldn’t find a supplier”, “didn’t have finances needed for purchase”).

5.2 Returns to input sales over time

A key evaluation concern is how the program has affected sales revenues and profits of input retailers. In March of 2009 (5-6 months into the input marketing season), respondents were asked to compare their expectations for 2008/09 sales revenues with revenues realized in 2007/08; 201 of the 230 retailers provided a response (Table 5.2).

Table 5.2: Retailers sales/profit expectations for 2008/09 compared to 2007/08.

Response	Government	Distributors	Coops	Agro-dealers	Total
Higher	44 (79%)	27 (44%)	4 (50%)	38 (50%)	113 (56%)

Lower	6 (11%)	32 (53%)	5 (50%)	26 (34%)	69 (34%)
Same	6 (11%)	1 (3%)	0	12 (15%)	19 (10%)

Source: Retailer survey.

Note: the question was : Do you expect your2008/09 input sales revenue/profits to be higher, lower, or the same as last year (2007/08)? Percents shown are column percents.

Distributors, whose 2008/09 exclusion from the fertilizer program led to significant reductions in fertilizer sales, were the only group with more than half of respondents anticipating lower returns. Overall, there were more respondents anticipating sales and income growth (56%) than decline (34%). Reasons offered by different categories of retailers for expecting higher sales revenues or profits in 2008/09 over 2007/08 included:

- Agro-dealers cited growing demand for inputs by farmers (62%), good rains (8%), the subsidy program (8%), and a variety of business factors (credit, selling year-round, lower prices, few competitors, opening branch outlets) that helped them to increase stocks/sales (22%). Interestingly, those anticipating increased sales/incomes over 2007/08 were more likely to be located in Blantyre district (34% of agrodealers with positive outlooks) and Lilongwe (26%) than in the other districts surveyed. Kasungu had the lowest number of "optimists" with only 2 respondents expecting to do better than the previous year.
- Among the distributors, growing demand for inputs by farmers was also the most common response (60%), followed by the subsidy program (20%), and good rains (8%). Other factors mentioned were general development of the country, offering lower prices, and availability of new seed types. Most of the optimistic distributors were located in Mzimba and Lilongwe.
- Among those interviewed at ADMARC and SFFRFM, the reason for anticipating increased sales was primarily the subsidy program (63%), followed by a recognition that farmers' demand was increasing (21%), and a few responses referring to an improved stocks situation and few competitors. Most of those anticipating increased sales were located in Rumphi (65%), Blantyre (23%), and Machinga 21%), with the remaining 9 distributed across Kasungu, Lilongwe, and Mzimba.

5.3 Expansion and contraction of input shops and competition

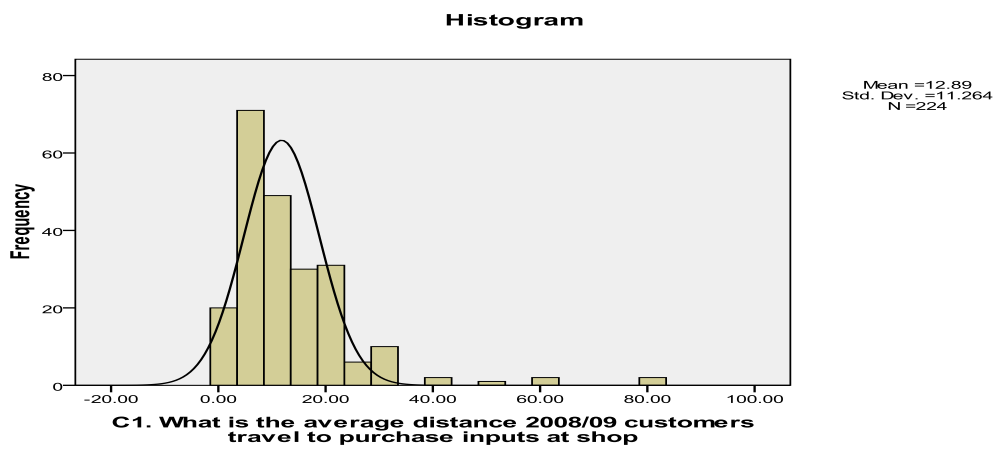
Retail outlets surveyed have been operating since 1965 (earliest established ADMARC retailer in the survey), with the earliest distributor shop interviewed established in 1982, the earliest independent agrodealer in 1986, and the earliest cooperative in 1997. Among all types of retailer, the greatest single year of growth was 2006 (the first year of the input voucher program that allowed private sector participation). Thirty-five percent of agrodealer, 33% of distributor, and 27% of ADMARC outlets opened during the period 2006 through 2008 with 50% or more of the new openings in each category taking place during the 2006 season.

5.3.1 Defining market areas

We asked respondents to report on the number of competitors in their marketing area each year from 2005/06 through 2008/09. Each respondent defined their marketing area in terms of the average or typical distance traveled by their customers and then reported the number of competitors present each year within that distance. The average distance that customers traveled to purchase inputs (all types of shops combined) was 13 kilometers, with 59% of the responses being 10 or fewer kilometers and a few (2%) average distances of 40 kilometers or more (Figure 3).

The mean distance by category of retailer differed, with the shortest average and median distances being reported by Government outlets (mean and median of 9 kms.), and the next shortest by agro-dealers (mean of 13 and median of 10 kms).

Figure 3: Average distance in kilometers travelled by input retailer customers.



Distributors and cooperatives reported the longest distances (both had mean responses of 16 km) but the median was higher for the cooperatives (15 km) than for the distributors (12 km). The mean distances between distributors, government outlets, and agro-dealers were compared and statistically significant differences (t-test at .05 or better) were found for each pair-wise comparison.

5.3.2 Changes over time in the number of competitors

During 2008/09, the average number of competitors within these self-defined marketing areas was 5.4, with government outlets reporting fewer (average of 3) and private sector outlets reporting more (average of 6 for distributors, 7 for agro-dealers and 6 for cooperatives). Table 5.3 summarizes the competition information by putting retailers into categories by stated number of competitors (none; low, 1-5; medium, 6-10; high >10) and looking at the differences across retailer types. The 1-5 competitor category contains the largest share of retailers for each type of outlet, but there is clearly a tendency for government outlets to be more heavily represented in the ‘low” competition categories of zero and 1-5 than other types of outlets. These statistically significant differences support the conventional wisdom that government outlets do tend to serve more remote locations where private sector retailers are less likely to operate; the same pattern was found in the retailer survey of 2007.

Table 5.3 Government and private sector retailer competition levels 2008/09

Number of competitors	Government	Private Sector		
		Distributers	Cooperatives	Agro-dealers
Zero	16.9%	0%	11.1%	4.9%
1 to 5	66.2%	48.5%	44.4%	39%
6 to 10	13.8%	42.4%	33.3%	39%
>10	3.1%	9.1%	11.1%	17.1%

Source: Retailer survey

Retrospective information about the evolution of the number of competitors in their market area for each year from 2005/06 to 2008/09 reveals two different patterns. Agrodealers and distributors reported increases in the average number, which increased from 5.82 in 2005/06 to 6.72 in 2008/09 for agrodealers (a 15% increase) and from 5.78 to 5.98 for distributor outlets (a 3% increase). Cooperatives and ADMARC/SFFRFM reported increases for 3 years, followed by a decline for the 2008/09 season. For ADMARC/SFFRFM there was a 7% growth in the average number of competitors from 2005/06 through 2007/08, then in 2008/09, when the private sector was excluded from the fertilizer subsidy program, the average number of competitors declined to 3.03 (below the 3.09 level for 2005/06).

Whom the respondents viewed as competitors is admittedly a somewhat subjective assessment. We suspect that the lower rate in growth reported by distributors, many of whom are located in the same markets as the agrodealers, is because they are not aware of all the agrodealers and/or do not consider them serious competitors because of the limited volumes traded by them. It is not surprising, however, to see ADMARC/SFFRFM managers reporting a decline in competition given the decision to exclude private sector shops from fertilizer sales in 2008/09. Whether this apparent decline in competition has a negative impact on farmers' access to inputs needs to be examined through analysis of the household survey and is not covered here.

One way to minimize the subjectivity is to look at the percent of retailers who experienced an increase, decrease, or no change in number of competitors instead of looking at the magnitude of that change. Spanning the period from 2005/06 to 2008/09, private sector retailers were more likely to experience an increase in competitors than public sector retailers. Overall however, most retailers among all categories experienced no change in competition (almost 80% of retailers reported that the number of competitors in 2005/06 was the same as in 2008/09). In the shorter term, between 2006/07 and 2007/08, more retailers of all types experienced an increase in competition rather than a decrease. From 2007/08 to 2008/09, more private sector retailers experienced an increase in competition (probably reflecting an increase in retailers selling seed and chemicals rather than fertilizers), and more government retailers experienced a decrease in competition (probably reflecting a decline in those competing in the fertilizer market, which most ADMARC interviewees considered their main market).

5.4 Community perspective on the evolution of input supply at the retail level

In a community survey conducted in 2008/09, questions were asked regarding the input supply available to the surveyed communities. Between 2006 and 2007/08, most communities reported that there was little or no change in both the number of nearby fertilizer sellers, and the number of hybrid maize seed sellers. However, this did vary significantly across region as shown in Tables 5.4a and 5.4b.

Table 5.4a Change in fertilizer sellers, 2006-2007/08

	Overall	Region		
		North	Center	South
Increase	16.3%	16.7%	15.6%	16.7%
Decrease	22.5%	0	21.9%	36.7%
About the same	61.3%	83.3%	62.5%	46.7%

Source: Community survey.

Table 5.4b Change in hybrid maize seed sellers, 2006-2007/08

	Overall	Region		
		North	Center	South
Increase	21%	15.8%	25%	20%
Decrease	22.2%	10.5%	12.5%	40%
About the same	56.8%	73.7%	62.5%	40%

Source: Community survey.

While the differences across regions for fertilizer sellers were not statistically significant at the 0.05 level they were significant at the 0.10 level (chi-square). The differences across regions for the hybrid maize seed sellers were statistically significant at the 0.05 level. In both cases, the South had more communities that experienced a decrease in sellers than either of the other regions. The North and Center had more communities that experienced little or no change in the number of sellers. Additionally, between 2004/05 and 2007/08 almost 80% of communities across all regions stated that there was no change in the number of fertilizer retailers not participating in the voucher program. Most of those reporting no change, had zero levels in 2007/08—which implies zero levels throughout the period.

The differences in types of retailers commonly used in the communities in 2008/09 are also of note. Unsurprisingly all communities identified ADMARC as one of the commonly used outlets for redeeming 2008/09 coupons. In 40% of communities, SFFRFM was identified as another commonly used outlet. Over 60% of communities reported that a private company (usually one of the distributor outlets) was a commonly used outlet for redeeming coupons, but only two communities (3% of the sample) identified a small trader (agrodealer) as being a frequently used outlet. There were geographical differences in the type of retailer that was used; SFFRFM was significantly more likely to be used in the North and Center than in the South, as were private companies.

Although all communities used ADMARC for redeeming coupons, there was a permanent ADMARC market in less than half of the communities. In general, there were more communities with permanent ADMARC markets in the North than in the Center and South, although these differences were not statistically significant. Thirty-eight percent of all communities were more than 10 km from a permanent ADMARC market.

Another issue discussed in the community survey was how well the commonly used outlets ran. Specifically, communities were asked how frequently there were long lines at the outlets commonly used for redeeming coupons. The results show some variation across store type and across region.

While long lines at ADMARC and SFFRFM were considered a major problem by over 70% of the communities, only 60% cited this as a major problem with the private companies. SFFRFM had the highest “often/major” response rate, which might explain why it also has a higher rate of problems with tipping.

Table 5.5 Frequency of long lines at outlets commonly used for redeeming coupons, all regions, 2008/09

	ADMARC	SFFRFM	Small Trader	Private Company
Never	5.8%	0%	0%	9.6%
Seldom	7%	6.3%	50%	11.5%
Often, minor	15.1%	15.6%	0%	19.2%
Often, Major	72.1%	78.1%	50%	59.6%

Source: Community Survey

There was very little variation across regions, except among private companies. Private companies in the South were much more likely to have long lines never or seldom than those in the North and Center, and private companies in the North were much more likely than others to have major long lines (often).

6. Analysis of the seed program and its impacts

This discussion is divided into two sections. The first is based on interviews with representatives of seed production firms and the Seed Trade Association of Malawi; it deals with the broad design and implementation issues of the seed subsidy program. The second section deals with the retail level and draws primarily on the retailer survey results.

6.1 Seed producer and distributor perspectives

The most consistent and important finding is that most suppliers are pleased with the voucher program and would like to see it continued.

6.1.1 Does the voucher program promote competition?

Interviewees believe that the voucher program has stimulated competition in the industry BUT generally not price competition. Some price competition does come into play when seeds are placed at the retail level because suppliers try to offer higher commissions than their competitors to encourage retailers to promote their products. Most suppliers have a sliding scale for distributor commissions. ADMARC usually gets the highest because they have the highest sales volume (and also negotiate well); distributors would get maybe 5% less than ADMARC and agro-dealers another 2-3% less because the costs of supplying them are high and the volumes are low.

Suppliers do not generally use pricing to attract farmers because of high distribution costs already incurred in setting up rural supply networks. Most competition is through advertising, conducting demonstrations, trying to get products placed close to farmers, etc. These types of competition may well be more appropriate than price competition at this stage of demand creation, which requires significant investments in educating farmers. Most suppliers have increased their marketing budgets since the program began; particularly for promotion of hybrids.

6.1.2 Does the voucher program promote collusion?

The major issue this year was the determination of the price that the GOM/donors would pay to the seed companies for each voucher. Early discussions with donor representatives gave the team the impression that there was a major problem of collusion among the seed suppliers prior to negotiations with the donors and GOM to set the price/value of the 2008/09 voucher. One interviewee stated: "….donors/GOM negotiated poorly and caved in to the price demands of the collusive seed suppliers". Further investigation of the issue by the team revealed that the very nature of the GOM/donor decisions about how prices would be determined forced the private sector to join forces in putting forth price recommendations that were mutually acceptable to all. In other words, the program itself is pushing the seed suppliers toward "collusive" practices.

The private sector wanted a system of "top-ups" for the vouchers so that each voucher had a set value and each firm could ask for a variable amount of additional money (subject to a ceiling) when the voucher was redeemed for their product—in their view, this is how to build price competition into the voucher system. Top-ups allow suppliers with higher cost structures or better quality seed to set prices based on these differences. One donor expressed the view that without top-ups firms who produced seeds associated with higher yields were being penalized because they couldn't get a price that paid them adequately for the better quality and the system might be unwittingly encouraging the production of lower quality seed. Unfortunately, the GOM did not want top-ups in 2008/09, largely because of the elections and the confusion in 2007/08 about top-ups.

In 2007/08 suppliers had agreed to a 400 MK voucher and a top-up with a ceiling of 90 MK. Unfortunately, the top-ups created a great deal of bad press for the private sector when a poorly informed Minister made a statement in a public meeting that top-ups were not legal and any retailer asking for one was breaking the law. After significant pressure from STAM, the Government finally made an announcement that top-ups were legal. At the same time, however, the GOM said that government outlets would not ask for top-ups. This made it impossible for the seed suppliers, most of whom had already placed seed at ADMARC/SFFRFM, to have other distributors and agro-dealers continue to ask for top-ups so they virtually disappeared in 2007/08.

In addition to not authorizing top-ups in 2008/09, the GOM also insisted that there had to be a single value set for paying the seed suppliers for their seed vouchers, regardless of differences in the costs of production and/or quality of the seed.

The combination of these two GOM decisions forced the seed suppliers to discuss price among themselves and put forth a price that was mutually acceptable to all participating suppliers. Box 6.1 provides details on how STAM worked with their members to come to their price recommendations.

Yes, our conclusion is that there was "collusion" among seed suppliers, but it seems to have been forced on the suppliers by the very nature of the program and the rules established by the Government. Building top-ups into the seed voucher program should resolve this problem and contribute to price competition in the sector.

6.1.3 Has the program contributed to greater "professionalism" in the sector

One indicator of the growth of professionalism in the sector is based on the growth and performance of the sectors only professional association—STAM. Most signs indicate that the Seed Association is functioning well.

- STAM successfully challenged one seed producer for putting grain rather than seed on the market;
- STAM admitted new members specializing in legume seeds;
- STAM got ADMARC to stop their practice of selling only one brand of seed at a time (see below).
- General satisfaction with the association was mentioned by all interviewed
- One supplier's view of STAM's role in the seed sector to date:
    - Provides small firms with an opportunity to get involved
    - Try to keep interests of GOM and seed companies both in mind
    - Trying to decrease "ineffective" competiton..the respondent liked to talk about "coopetition"
    - Key objective is to maintain good quality seed in the market

STAM Seed Voucher Pricing Logic

The cost of production for seed produced for the 2008/09 season ranged from 720 to 780 MK, depending on the supplier. This was a considerable increase over production costs for 2007/08 seed due to:

- a very high maize grain price at the time the firms were negotiating contracts with their seed multipliers;*
- increases in fertilizer costs (??%)
- increases in transport costs (??%)
- increases in seed certification costs (14%)

According to a STAM source, STAM proposed a voucher value of 720 MK in GOM/supplier negotiations that took place in June/July of 2008. When GOM balked, STAM's counter proposal was 550 MK plus a top-up with a ceiling of 150 MK (700 MK max). Because the GOM didn't want a top-up, the final value offered by the GOM was 680 MK (40 MK below initial STAM proposal but 190 MK above the previous years voucher value of 490—i.e., a 39% increase). DfID assisted in negotiations by checking seed prices in neighboring Zambia and came to the conclusion that what STAM was asking for was a "middle range price". This information apparently encouraged donors to drop objections to the substantial price increase over 2007/08 levels.

STAM believes that the donors and GOM who are negotiating prices with them do not understand the underlying calendar and procedures for establishing seed prices. The most strongly argued point was that prevailing seed prices at the time that subsidy negotiations take place for the upcoming year (June/July) cannot be used as a basis for pricing the new supply of seeds that will be coming on the market following negotiations. Most seed suppliers claimed that they set their prices at the beginning of a season and do not change them until new seed comes on the market the following year (usually Oct/Nov in Malawi); hence, prices observable in June/July 2008 (when negotiations took place) were established in Oct/Nov 2007 and based on seed multiplication costs during the 2006/07 campaign.

Seed prices in June/July can only serve as an indicator IF the costs of production in 2006/07 were very similar to those in 2007/08. This was clearly not the case, as 2007/08 was a year of worldwide inflation in food, energy, and agricultural input prices (especially fertilizer). Several interviewees suggested that prevailing maize grain prices during the period when contracts were negotiated with seed multipliers (Aug/Sept/Oct 2007 for the 2008/09 seed supply) would provide a better indicator of future seed prices than the prices of seeds from the previous year that were still on the market in June/July. STAM feels that the GOM and donors do not understand this because one of the donors' arguments against the proposed 720 MK price for 2008/09 was that the seed price prevailing in several Malawian markets at the time of GOM/STAM negotiations (Jun/Jul) was only 520 – 580 MK. This was interpreted by the donors as a rough indicator of what suppliers should accept from the GOM for the 2008/09 season.

* Per several interviewees, seed prices tend to run at least 20-25% higher than grain prices. Multipliers apparently know this and take the prevailing grain price into account when negotiating production contracts with seed companies. The team was unable to confirm these estimates with multipliers.

One missing element in STAM's performance was the ability (or, perhaps, intentional decision not to try) to consolidate general supply and demand data on the sector. The evaluation team's request for a consolidated data base covering all manufacturers was met with the response that it was best to collect this information individually from each firm. Building a consolidated data base has been a challenge for the Malawi Fertilizer Association also, but they made some progress in this area in 2008/09 (see below).

A second indicator of the growth of professionalism is related to problems encountered by the AISAM agrodealer network and the manner in which they are being resolved both through the legal system and through efforts by seed sector actors. In 2006/07 the AISAM agrodealer network set itself up as an intermediary between the seed companies and a large number of agro-dealers who wanted to sell voucher seed. Seed companies delivered seed directly to agro-dealers designated by AISAM, but the financial responsibility for the consignment of all this seed was assigned to AISAM, which did all the paperwork for voucher redemption, took a fee from the commission offered by the seed companies on the redemption value to cover its services, and paid the retailers the rest. Per AISAM, the agro-dealer gets 40% of the sales commission offered by the supplier and AISAM gets 60%. Using the agro-dealer commission of 12.5% of the 680 voucher redemption value cited by one supplier, this would be 34 MK per voucher for the agro-dealer and 51 MK for AISAM. The agro-dealer is expected to pay for unloading the shipments at his shop and storage costs (use of pallets to keep seed off the floor, guards, etc.); these costs can be as high as 8-10,000 MK for some of the larger dealers. While the payments to AISAM by the agrodealers are substantial, the service being rendered to both agrodealers and the seed suppliers was also substantial given the level of paper work required for voucher redemption. Without AISAM's support in 2006/07 it is unlikely that many agrodealers would have been able to participate in the seed voucher program as suppliers lacked the resources necessary to deal directly with so many small, scattered retail outlets.

AISAM ran into cash-flow problems during the 2007/08 campaign; much of it attributed to slow private sector sales following the top-up confusion and poor record keeping of stocks that were moved from AISAM agrodealers to other locations during the course of the campaign. There are several cases of litigation pending. As a result, AISAM substantially reduced its support to agrodealers in 2008/09, concentrating on one small geographic area and dealing exclusively with one seed supplier. This was a blow to agrodealers who were depending on AISAM, but several seed suppliers have begun developing direct contracts with some of the agrodealers whom they had supplied via AISAM in 2006/07 and 2007/08.

It is too soon to draw conclusions about the AISAM experience and their future role. We may find over time that they played a crucial role in introducing agrodealers to seed suppliers, but once the introduction was made the logical next step is for suppliers to establish direct contract relationships. This appears to be happening. Our retailer survey (see below) suggests that the sector is moving toward a declining number of agrodealers selling voucher seed, but it may also be encouraging the retention of the better performing outlets.

As AISAM scaled down its role in linking agrodealers to maize seed suppliers, it officially became a seed producer in 2008/09 and obtained GOM authorization to directly sell legume seeds and redeem flexi-vouchers. This move was clearly stimulated by the introduction of the flexi-voucher and the scarcity of legume seeds on the market. Per AISAM, this is going well. As a result of this new activity, AISAM has become a member of STAM.

6.1.4 Growth in seed supplier sales and income

The shift to more hybrids as a share of total sales has increased profits for some firms. This is simple to understand as one needs 4 kg of OPV to get the same revenue as 2 kg of hybrid, and transport costs for 2 kg of hybrid is lower.

All interviewees have increased their seed sales since the program began; some more than others. One respondent's rough overview of the industry growth is revealing in terms of thinking about what will happen if the subsidy program ends:

- 4.5 thousand tons of improved seed sold before vouchers
- 9-10,000 tons sold now

- Withdraw seed subsidy and sales will drop to about 6.5 thousand tons
- Withdraw fertilizer subsidy and sales will drop to 5,000 tons (very small increase over pre-subsidy level of 4.5 thousand tons).

The one caveat concerning the removal of fertilizer subsidies was that rising maize prices may encourage more maize production and use of hybrids even without the fertilizer subsidy.

Most interviewed believed that if the seed voucher program stopped, about 40% of farmers now purchasing with vouchers would find money to continue purchasing. The one exception to this view was a supplier of OPV who argued that in the area they served farmers were still too poor to purchase improved seed without assistance and sales would plummet to pre-voucher levels. All believed that if the fertilizer subsidy stopped, it would result in a much bigger decline in seed demand than if the seed subsidy stopped, but most could not offer a specific percentage decline from current demand.

6.1.5 Views on different aspects of the subsidy program

Seed company participation in the AISP. Most thought that the system of selecting participating firms was equitable (primarily because the GOM relied on STAM recommendations). In general, any firm producing seed in Malawi is eligible; this excludes international firms who sell only imported seeds. As the evaluation team did not interview firms denied participation, we do not have an alternative perspective here.

Role of independent agrodealers. Most suppliers believe that the agro-dealer network is important to developing their markets and have placed seed on consignment with agro-dealers, initially indirectly through AISAM and increasingly through direct contracts.

Role of ADMARC/SFFRFM. Most believe that Government outlets play an important role in the seed distribution system; observations concerning ADMARC/SFFRFM included:

- They have an excellent distribution network but poor management
- Poor management illustrated by:
    - Not submitting vouchers on time
    - Not allowing farmers to select the brand of seed that they want for their voucher (many ADMARC outlets decided to distribute only one type of seed until those stocks ran out and then the next type—there is some suspicion of payoffs by some suppliers to encourage this, but no solid evidence—the practice was discontinued when one supplier brought it to the attention of STAM and STAM met with ADMARC/SFFRFM management to insist that the practice be stopped).
- Most suppliers sold some of their seed through government outlets
    - only one interviewee stated that ADMARC was his preferred outlet (lower cost than distributing to multiple agro-dealers and higher volume sales);
    - all others believed that developing their relationships with agro-dealers and distributors would be more beneficial in the long-run;
    - one had stopped placing seeds with ADMARC after an initial attempt to do so in 2006/07 because it was so complicated administratively.

Concerns with the 2008/09 program implementation.

Most respondents stated that coupon payment was slow but "reasonable" in 2006/07 and 2007/08, but were very concerned about delays in payment for 2008/09.

- One firm reported submitting vouchers in December but not receiving any payment until February; less than 1/3 of submitted vouchers had been redeemed by the end of February.
- Another firm had received 70% of voucher payments by February for the 2007/08 campaign but only 9% by that point in time in 2008/09.
- Only one firm said they were satisfied with 2008/09 payment.

No one seemed to understand the reasons for the delays, but rumor had it that the problem was being resolved toward the end of the team's field mission (March 2009).

6.1.6 Ideas for improving the seed voucher program

The following bullets represent recommendations received from those interviewed:

- Allow top up
- Move to a system of bar coding for vouchers to speed things up and avoid fraud
- Do not allow flexi-vouchers to be used for maize; doing this makes it difficult for the private sector to predict demand and place stocks. Because so many flexi-vouchers were redeemed for maize, suppliers had to move stocks around a lot more than they did when they could predict demand based on the maize vouchers distributed.
- Better information campaign re flexi-vouchers; many farmers thought they were fraudulent vouchers because they did not have "maize" written on them and therefore did not use them.
- Late distribution of vouchers led to a lot of unused vouchers in the South; print and distribute early.
- Use national ID system to control who gets vouchers and who cashes them.
- To realize benefits of increased crop production need to have a parallel program to improve crop storage…estimate 20% loss of maize production from poor storage.
- Improve control over who gets vouchers…Many politicians had them in 2008/09.
- Firms with a large volume of vouchers should look into hiring out the processing; some have had positive experience with this in 2008/09.
- Government should invest more in educating farmers about the benefits of improved seed in addition to providing the vouchers.
- Need to improve the link between fertilizer and seed quantities covered by the vouchers. Farmers are getting much more fertilizer than they can use on the amount of improved seed available through the voucher program; this results in many farmers selling the fertilizer rather than using it.
- Train and employ more seed inspectors so there are not bottlenecks with the certification process; delayed certification leads to loss of seed and deterioration in quality while multipliers are waiting for the inspectors to visit their fields.
- Develop a credit program to assist seed multipliers; MRFC is not adequate.

6.1.7 Ideas for improving seed sector in general

The following points were made by the President of STAM, who said they were all issues that STAM was working on.

- Need to speed up the variety release process (pass pending legislation permitting one year of in-country testing if variety already approved in two neighboring countries).
- Address water and electricity costs and reliability of supply: they have become major impediments to production.
- Seed sector is “exempt” from tax but not “zero rated”; they want to be zero rated so that they can claim back any VAT paid to others.

6.1.8 Overall assessment of the seed subsidy impact on the seed supply sector

Despite the problems described above, the seed voucher program seems to be accomplishing much of what we would want a voucher program to accomplish in terms of market development:

- Expansion of business volume for the agro-dealer retail network
- Increased demand for a product that most farmers didn’t use before the program
- Confidence among suppliers that about 40% of that increased demand would continue without the seed subsidy program
- Increased investment in seed marketing
- Increased competition among suppliers (but not price competition)
- The creation of a seed suppliers association with a number of accomplishments in terms of representing the interests of members

6.2 Maize seed retailer perspective

6.2.1 Program participation

Of the 230 retailers interviewed, 198 sold maize seed in 2008/09 and 206 in 2007/08. Table 6.1 shows that the number and share of maize seed sellers participating in the voucher program declined slightly from 2007/08 to 2008/09. The decline was strongest among independent agrodealers (from 47% to 29% of all agrodealers selling maize seed) and cooperatives (from 63% to 57%). By contrast, the number and share of government and distributor outlets participating in the seed program increased (6% and 2%, respectively).

Table 6.1 Number of maize seed retailers who participated in the voucher program and percent of all maize seed retailers participating, by type of retailer and year

Type of retailer	Participate 2008/09		Participate 2007/08	
	Number	Percent of all maize seed sellers	Number	Percent of all maize seed sellers
Distributor	49	79	47	77
Government	61	95	57	89
Cooperative	4	57	5	63
Independent Agro-dealer	19	29	34	47
Total participating in program	133	67*	143	69*
Total in sample selling maize seed	198		206	

Source: Retailer survey.
*This is percent of total maize seed sellers including those who did not respond to the question about participation.

6.2.2 Impacts of the program on customer traffic and sales revenues

Participating retailers were also asked about the perceived impact of the 2008/09 subsidy program on customer traffic in their shops and on sales receipts. (Table 6.2). A decrease in number of customers was the predominant response for participating outlets in the distributor category; but all other types of outlets thought the voucher program had contributed to an increase in customer traffic. Answers followed the same general pattern for the question about sales receipts—down for distributor outlets and up for all others.

Table 6.2 Perceived impact of the program on number of customers visiting the outlets of retailers participating in the voucher program

Impact	Government	Distributors	Coops	Agro-dealers	Total
Increase	42	18	2	14	76 (64%)
Decrease	7	21	1	1	30 (25%)
No change	4	4	1	4	13 (11%)
Total	53	43	4	19	119

Source: Retailer survey.

Note: The question asked was: *Compared to last year (2007/08), do you think this year's (2008/09) program increased, decreased, or had no impact on the number of customers visiting your shop?*

These same questions asked of maize seed retailers who did not participate in the program elicited different response patterns. Of the 55 retailers in this group, only 47 responded to the questions. They were predominantly agrodealers (38 in number), followed by distributors (7) and one each for ADMARC and cooperatives. Sixty-six percent declared that they thought their customer traffic had declined as a result of the voucher program and 68% thought their sales receipts had declined. The 9% seeing customer traffic increase and the 13% seeing income increase were divided evenly between distributor and agrodealer outlets. These results provide fairly good evidence that those who participated in the 2008/09 voucher program did better in terms of customers and sales than those who did not. It also appears that the non-participants are primarily agrodealers, likely a result of the breakdown in the AISAM support to agrodealers mentioned in section 6.1.3 above.

6.2.3 Views on continuing the seed voucher program

Respondents were all strongly in favor of continuing the seed voucher program. Ninety-one percent of those participating in 2008/09 wanted the program to continue and 76% of those not having participated thought it should continue, even though many in this latter group felt that the program had had negative impacts on their businesses. There were no statistically significant differences in the response rates to this question across the different types of retailers. The primary reason given for continuing was that a lot of people benefit from the program (93% of those responding that the program should continue gave this reason). The primary reason given for not continuing the program was that it prevented the respondents (i.e., input retailers) from selling their products and earning money (33% of those responding that the program should not continue); the second most common reason was that the program created arguments among villagers (21%) and the third most common was that farmers should have a choice of outlets from which to purchase their inputs (13%) – this latter was probably more a reflection of issues with the fertilizer program than with the seed program.

6.2.4 Problems encountered with implementing the seed voucher program

The three types of sales problems most frequently encountered by retailers participating in the seed subsidy program are overall seed stock outages, not having the specific product that the customer wants, and dealing with long lines of customers because voucher sales are concentrated during a very short period of time.

Of the 133 seed retailers participating in the 2008/09 program 132 responded to questions about their experience with these types of problems. Overall, only 26% of participants had a day or more when they were completely out of seed stocks; but 58% experienced instances where they did not have the specific product that their customer wanted. For the total seed stock outages, distributor outlets were much less likely to have experienced this problem (12%) than either government outlets (33%) or independent agrodealers (42%). There were no statistically significant differences across retailer groups for shortages of specific seed products. Long lines were experienced by 58% of participating seed retailers, with ADMARC reporting this problem much more frequently (72% of outlets) than other types of retailers (<50% of the time). This is likely due to the fact that ADMARC lines included both seed and fertilizer voucher recipients while the lines at the other shops were only for seed. The result does suggest that farmers would be better served by having more outlets available for voucher redemption. We also examined differences in the prevalence of these problems across regions, but nothing statistically significant was found.

Responses to this same set of questions by retailers who participated in the 2007/08 voucher program were more limited in number (only 86 of 144 shops participating) because of high turnover in shop personnel, which meant that respondents who had not been working at the current location during the 2007/08 campaign were not asked about the conduct of the voucher program for that year. The overall results for the total stock outages were identical to 2008/09—only 26% had such problems. Again, ADMARC and agrodealers exhibited a higher rate of problems (38% and 27%, respectively) than distributors (14%); but the difference was not statistically significant. Outages of specific products were less common in 2007/08 with only 49% overall (compared to 58% in 2008/09) having declared a problem. Given the substantially reduced sample size, it is difficult to know if this was a real change or a result of the loss of almost 50 observations. Problems with long lines were reported by 55 percent (compared to 58% in 2008/09). Again, the distribution among types of retailers exhibited statistically significant differences with ADMARC have the highest prevalence (68%, followed by distributors (62%) and independent agrodealers (40%). In comparing years, we note that the problem of long lines dropped considerably from 2007/08 to 2008/09 for distributors (from 62% to 46%), while it increased for ADMARC (from 68 to 72%) and agrodealers (from 40 to 42%).

These results leave one with the impression that farmers might be better served if some of the distribution burden was shifted from ADMARC, which seems to have the greatest "long line" problem, to the distributor outlets, which had significantly lower long line problems in 2008/09 as well as fewer overall seed stock outages. There is some support for this view from the Focus Group Discussions held with other stakeholders. Shifting some of the burden to independent agrodealers may be problematic in the absence of improved support programs for them given the relatively high levels of seed stock outages and specific product outages they experienced in 2008/09. While their "line" problem is considerably less prevalent than for other types of retailers, it is doubtless a reflection of the limited stocks most of them are carrying.

Another type of problem with the voucher program that was encountered by seed retailers was fraud. In 2007/08, 16% of participating seed retailers (all types of outlets) had farmers present them with falsified vouchers at least once. Twenty-two percent of government retailers experienced this, whereas 11% of private sector retailers had this problem. In 2008/09, the aggregate number increased to 25%. Among government retailers, 39% were presented with fraudulent vouchers, whereas only 13% of private sector retailers experienced this problem. Additionally, in 2007/08, 43% of retailers had farmers present them with more than the authorized number of coupons, while in 2008/09 42% of retailers experienced this problem. There was no significant difference between private sector retailers and government retailers. Finally, 25% of retailers had customers who were not authorized to present coupons in 2007/08, and this number increased to 36% in 2008/09. These numbers suggest that problems with fraud may be increasing. In general, there does not seem to be much difference between the experiences of the public and private sector retailers, except in the case of falsified vouchers.

7. Analysis of the fertilizer program and its impacts

7.1 Fertilizer importer and distributor perspectives

This section of the report is based on interviews carried out in March 2009 with 11 representatives of 8 different fertilizer firms and the two agrodealer support networks—CNFA and AISAM. The Malawi Fertilizer Association (MFA) arranged to meet with an evaluation team member on March 7th, following their annual meeting; representatives of six of the fourteen member firms were present—two of the six represented firms with whom we had not conducted individual interviews so a total of ten firms were contacted.

7.1.1 2008/09 was a difficult year for distributors

Our evaluation of the impact of the AISP on the fertilizer sector for the 2007/08 and 2008/09 campaigns was rendered extremely difficult by the last-minute (October 2008) exclusion of the private sector from the retail distribution of fertilizers in return for vouchers. It was extremely difficult to arrange interviews and even more difficult to obtain the types of industry-level purchase and sales data that we were able to obtain for the 2006/07 evaluation. Most interviewees had no interest in returning to a discussion of the 2007/08 program (part of our terms of reference) and there was little to discuss about the 2008/09 program but the "exclusion" and the negative impact it was having--primarily on the distributors who rely heavily on fertilizer sales to maintain their networks of retail shops, which provide farmers with not only inputs but also a wide range of other services and products (e.g., RAB, Farmers World, Agora, Export Trading).

Because of our inability to obtain a complete picture of all carryover stocks, imports, and sales from each firm for both the 2007/08 and the 2008/09 campaigns, we make no attempt to conduct a "displacement" analysis using industry data. In 2006/07 we approached the displacement issue from both the industry data perspective and from the household survey data. For this round of the evaluation, we will rely entirely on the household survey analysis. Several firms did comply with our request for data and the Malawi Fertilizer Association has made progress in producing monthly reports on fertilizer stocks for a limited number of their members; but a displacement analysis comparable to what we conducted in 2006/07 cannot be done without a full accounting of transactions from all members.

Several interviewees did express reservations about the evaluation team's estimates of 2006/07 fertilizer consumption and displacement, with most suggesting that total annual consumption for Malawi is in the range of 220-280,000 tons (our estimate was almost 300,000 tons). We cannot rule out dissatisfaction with our use of the data collected in 2006/07 as a partial explanation for the lack of data sharing in 2008/09, but in response to these critiques our data forms were revised to better control for double counting of sales between suppliers.

7.1.2 2007/08 and 2008/09 fertilizer program issues

The following topics were discussed with most interviewees:

1. Progress made on recommendations of the 2007 evaluation
2. Impact of the 2007/08 "distance" incentives on the expansion of distribution networks

3. Fertilizer sector data and estimates of sales/displacement
4. Access to foreign exchange in 2008/09
5. Exclusion from retail sales in 2008/09

The first three points were generally introduced by the evaluation team, while the 4th point was systematically introduced early in the discussion by the fertilizer importers and the 5th point by the importers with distribution networks.

Progress made on 2007 recommendations. Most suppliers agreed that improvements were made in the program with respect to many of the recommendations made in our 2007 evaluation report. The most commonly discussed topics included:

- Voucher format/printing, distribution, and fraud
- Tenders: timing and transparency
- Fostering constructive government-private sector dialogue

Although there was an effort to improve on these aspects of the program, some of the adjustments introduced new problems or only partially resolved old problems.

For example, the GOM's effort to reduce voucher fraud led to a very secretive approach to awarding the printing contracts in 2008/09, but failed to avoid the theft of a large number of vouchers that appeared on the market before the program officially began. Most suppliers agreed that the GOM responded rapidly and effectively to this breach of security, but ended up suggesting that, despite higher costs, printing vouchers outside the country might be a better option. A related comment concerned the distribution of sample vouchers to distributors. One firm pointed out that the distribution of samples came late (after the program began) and the samples were insufficient in number, covering only about 1/3 of his retail outlets. This made it very difficult to train staff adequately in the identification of fraudulent vouchers, resulting in about 5% of vouchers redeemed by his retailers having been fraudulent. Among ADMARC/SFFRFM retailers who participated in the retailer survey, 74% reported that they had received some training in how to identify stolen or falsified coupons in 2007/08 and 86% reported that they had received training in 2008/09. All respondents mentioned the problems caused by issuing a second round of vouchers. It was very difficult to control for fraud once this happened; it led to a new geographic distribution of demand that was unanticipated and required costly second movements of fertilizer by both the private sector and Government outlets; and most respondents thought that there was no discernable programmatic logic to where the supplemental vouchers were distributed. Furthermore, the supplemental vouchers could not be tracked for payment of the "distance" premium, so retailers redeeming theses vouchers in remote locations were deprived of that premium.

Most felt that the goal of distributing vouchers to the neediest farmers was a good one, but expressed concern about the timing of the voucher distribution and the large number of politicians who seemed to have gotten access to vouchers in 2008/09 and been allowed to distribute them as they wanted.

Most agreed that the vouchers were distributed late in both 2007/08 and 2008/09. This caused bottlenecks and long lines at distribution points that could have been avoided with earlier distribution of vouchers and earlier opening of ADMARC shops in 2008/09.

Concerning the perception of political interference, it is noteworthy that during the 2007 evaluation, there were many complaints about procedures for distributing vouchers, but complaints about “politicians” being involved in the distribution were not common. Some interviewees cited examples of traders getting vouchers from politicians and then presenting themselves at ADMARC as representing groups of farmers and being able to take large stocks away that they subsequently sold at well below prevailing market prices. The team has no solid documentation of this link between politicians and traders, but it seems to have become the “conventional wisdom” for many. We do have good documentation that there was fertilizer on sale in Kasungu markets at prices as low as 6000 MK per bag. This is significantly below the 11000 MK prevailing price. It was so low, that several distributors who were willing to sell at cost or slightly below (about 10000 MK) were still unable to compete. In the view of the distributors, the only way a price could be as low as 6000 MK would be if it were fertilizer obtained through fraudulent vouchers or sold into the market by farmer recipients.

Most agreed that the announcement time of the tenders had improved but the actual awarding of the tenders was still too late. Late awards mean that:

- suppliers whose international supplier will hold prices fixed for less than 90 days cannot compete because the tender demands that the price be held fixed for 90 days;
- many suppliers cannot obtain credit until they are awarded the contract, so actual implementation is slowed down by late tender awards.

Most agreed that the transparency of the tender process had improved, but cited additional improvements needed based on their perceptions of the 2007/08 and 2008/09 experience:

- GOM seems to be awarding strictly on lowest price without any effort to evaluate the capacity of a firm to deliver;
- In both 2007/08 and 2008/09 there was at least one firm that defaulted on their delivery;
- In the 2008/09 case, it was a firm that had not been recommended by the tender evaluation committee, which considered the bid unrealistically low, but the firm was granted the tender anyway (LU report);
- By the time the default is acknowledged, the GOM incurs the risk of paying a significantly higher price to get a replacement shipment (this is documented in the LU report of 2007/08, which reported an additional cost of $2.5 million to the GOM to obtain the replacement fertilizers);
- In reassigning the default quantities to other suppliers, all agreed that the process was NOT adequate;
- GOM seems to be going back to suppliers who had offered the lowest prices in their initial tender submission BUT this is no indication of the price at which they would be able to supply at the time the default is acknowledged—often those who did not succeed with the earlier tender might have stocks they are trying to unload and be able to offer better prices;

- GOM needs to develop a more price sensitive system for filling in the default amounts, while better evaluating the ability of those submitting the initial tenders to deliver;
- Also suggested that GOM needs to impose penalties and enforce them on those who do not deliver;
- Most also agreed that SFFRFM should NOT participate in the tender process as it represents a conflict of interest, with GOM bailing them out if they cannot deliver as promised;
- Some firms expressed a belief that there are illicit payments made by some of the smaller, newer entrants into the business that result in them receiving favorable awards. The team found no evidence to support this claim, but heard it twice.

Suppliers in general were pleased with the improved dialogue between the private sector, donors, and the GOM following the 2006/07 program and our initial evaluation report. The creation of the fertilizer and seed traders associations grew out of this effort, frequent meetings were held where representatives of the associations were able to discuss their points of view and needs with the donors and the GOM, and many improvements were made. Unfortunately, for the fertilizer sector, this improved dialogue came to an abrupt end when the GOM announced that the private sector would be excluded from participation in fertilizer voucher redemption activities in 2008/09. This announcement came with no warning after the private sector had already:

- Received draft contracts from the government authorizing their participation in retail voucher sales for the 2008/09 campaign;
- Imported fertilizers over and above the government tenders to sell through the voucher program;
- Placed substantial amounts of fertilizer in their retail outlets.

One interviewee explained this breakdown in dialogue as due in part to donor personnel changes, and less engagement in advocacy for GOM/donor/private sector negotiations and transparency. Whatever the real cause of the breakdown, it represents a major threat to the survival of the private sector fertilizer retail business. It is also likely to reduce the number of international firms with direct representations in Malawi (YARA has already withdrawn, and others are seriously considering it).

The 2007/08 distance incentive. A major change in the 2007/08 program was the introduction of price incentives in the form of variable voucher reimbursement rates for vouchers redeemed in remote locations. The objective was to encourage the private sector to expand distribution outlets. Most suppliers took advantage of these incentives establishing relationships with independent agro-dealers or setting up temporary shops in remote areas during the input distribution campaign.

One donor representative was quite critical of the private sector effort, noting that they did not set up permanent shops. The team's view on this is that it would not have made good business sense to set up permanent shops in these locations after only one year of experimentation with the distance incentive. All fertilizer suppliers underscored the point that you CANNOT build a retail supply business on fertilizer only—the product has generally low margins and the demand is highly seasonal. To build a supply system in remote locations with very limited fertilizer demand outside the voucher program, it is necessary to establish multi-product retail outlets (this point was already highlighted above in the discussion of seed retailers). The voucher program could have contributed to building such outlets had the remote area incentives continued for several years giving suppliers and local retailers the time to establish good working relationships BUT the abrupt 2008/09 ban on private sector participation in the voucher redemption program was a serious set back to such efforts.

Most respondents felt that there were weaknesses in the way the distance premiums were calculated and would have asked for revisions had the program continued. Several felt that they either lost money or just broke even on these sales, BUT they agreed that it was in their long-run interests to pursue this type of expansion and had been actively negotiating with agro-dealers through the CNFA network to build workable contracts and supply chains. We were able to obtain some numbers concerning expansion of shops over time. As made clear in the notes, changes in numbers of shops was in response to the overall program and general fertilizer supply/demand issues, not just to the remote area premium of 2007/08.

Firm A: Established relationships with 15 agro-dealers to distribute fertilizer and other products (a recognition that inputs alone do not make for a viable retail outlet).

Firm B: Opened 4 new outlets in 2007/08 and kept them open in 2008/09, but had to close many others in 2008/09. Changes from 2005/06 to present for this firm included:

From 05/06 to 06/07: 94% increase in number of shops

06/07 to 07/08: 6% increase

07/08 to 08/09: a decline back to 74% of 2007/08 level

Firm C: Focuses on the wholesale market but developed relationships with 3 agrodealers and one distributor in 2007/08. Believes there is viable fertilizer demand outside the subsidy program and is focusing on responding to that demand.

Firms D & E: Took advantage of the remote premiums in 2007/08 but felt that some were not well priced.

Firm F: Increased the number of outlets by 20% from 2006/07 to 2007/08; both commercial and voucher sales were good in 2007/08. Reduced shops to 83% of 2006/07 level in 2008/09. Stocked fertilizer in shops for 2008/09 season and virtually nothing had sold up through March 2009 in several shops, due partially to voucher program exclusion but also partially to sharp increases in commercial cost of fertilizers—farmers can't afford it.

<u>Access to foreign exchange in 2008/09.</u> The foreign exchange issue is not specific to the fertilizer sector. It is the result of both rising commodity prices in world markets (fertilizer and fuel costs in particular increased Malawi's need for foreign exchange) and the over-valuation of the Malawian currency. One interviewee felt that the GOM had failed to accurately forecast the impact of rising prices on the budget for fertilizer and fuel, therefore making the problem worse than it might have been otherwise.

Rumors of a pending devaluation of the Malawian Kwacha have significantly increased during the past year; the conventional wisdom at the time we conducted interviews was that shortly after the elections in May 2009 there would be a devaluation (this has not happened). These rumors have fertilizer importers extremely nervous because their accounts at the Central Bank have not yet been credited with the US dollar funds that they need to pay their international suppliers. At the time of our interviews, no one had yet exceeded the date by which they needed to make this payment, but many were getting very close. Apparently, the US dollars received from tobacco sales are usually used to cover fertilizer debt, but this year that did not happen and the Central Bank held all of the dollars. One firm said that if they did not manage to pay off their US $ debt before a devaluation, they risked losing $5-7,000,000. Others mentioned obtaining dollars through "facilitators", but with a 20% discount. Other indications of the foreign exchange crisis mentioned were the fuel shortage experienced in towards the end of last year.

Several suppliers suggested that there is a need for the banks and the government to shoulder more of the risk associated with exchange rate fluctuations. One proposed that Malawi look at the Indian system where the government apparently "subsidizes" the exchange rate. One supplier stated clearly that they would be bankrupt if the devaluation took place before they got their US dollar debt paid off.

A related financing issue mentioned by one supplier was that importers traditionally get letters of credit from their banks to finance imports but recently more of the credit has been coming directly from the international fertilizer companies. He believed that this would not continue given the uncertainty caused by devaluation and lack of government policy consistency, so there may be greater problems procuring fertilizer for the upcoming year.

<u>Exclusion of the private sector from the 2008/09 retail sales.</u> In 2007, input suppliers were unanimous in stating that the most important thing the government could do to assist the development of a viable input supply network was to ensure policy stability. From 2006/07 through the early months of the 2008/09 campaign, this had been accomplished…then, with no prior notice, the government decided to make changes in the subsidy program that had serious negative consequences for private sector input distributors. Unfortunately, the changes were announced very late in the year, after the private sector had already…

- Received draft contracts from the government authorizing their participation in retail voucher sales for the 2008/09 campaign;
- Imported fertilizers over and above the government tenders to sell through the voucher program;
- Placed substantial amounts of fertilizer in their retail outlets.

Theories about why the government made this decision are wide-ranging. The government's argument is that they did it to better control the vouchers because they were not able to ensure that vouchers were redeemed for inputs when they were redeemed by the private sector. Government also argued that the private sector was much more prone to accepting fake vouchers than ADMARC/SFFRFM shops. The acceptance and presentation of fake vouchers was, however, lower for the private sector than for ADMARC/SFFRFM as a proportion of total vouchers accepted. As regards the extent to which counterfeit or non standard vouchers (those with serial numbers outside the ranges recorded by the Logistics Unit) have been accepted by different outlets, records for 2007/8 show that these (and sales without vouchers) accounted for 27% of ADMARC/ SFFRFM sales and 3% of private retailer sales (Logistic Unit).

Whatever the reasons for the decision, it has been very disruptive for the private sector, particularly for distributor outlets such as RAB, FW, Agora, Export Trading and Nyiombi—all of which depend on fertilizer for a substantial share of their sales receipts and profits. Although we have not been able to collect solid data on this, the distributors present at the fertilizer association meeting were very vocal about the importance of fertilizer income to their ability to maintain their existing retail networks. Most distributor outlets also sell a wide range of other products to farmers (other agricultural inputs such as seed and chemicals, groceries and basic staples such a sugar, hardware and building materials, agricultural tools and equipment, clothing, etc.). These outlets also serve as a local buyer for much of the produce that farmers sell (particularly crops such as maize and soybeans). It is possible that an unforeseen consequence of excluding the private sector from fertilizer sales will be a reduction in the geographic coverage of these multi-purpose shops and an increased burden on farmers to travel longer distances to find buyers for their crops and to purchase basic necessities. The government will need to do a careful assessment of these potential side effects should it decide to continue a policy of excluding the private sector from participation in the retail sales part of the fertilizer voucher program. One distributor stated:

> *This (exclusion) has badly affected us. We have carry over stock in excess of 2000Mt. Prices this [next] year will be 50% [lower] resulting in a substantial loss. Furthermore, sustaining our network of rural outlets has begun to be a heavy burden on the company's resources in the absence of fertilizer sales. We have been contemplating downsizing but have been resisting this strategy in the hope that the government will soon change its policies to be more private sector friendly.*

The impact of the 2008/09 exclusion of the private sector from fertilizer sales was also reported by most distributors to have had a negative impact on their seed sales because (1) advertising about the program did not make it clear that seeds were still available from private shops, and (2) even farmers who knew that seed was available in private shops preferred to make all their input purchases in one stop—that meant a government outlet since they had to go there for their fertilizer. Although most thought the overall impact was negative on their seed sales compared to what they would have sold without the fertilizer sales exclusion, seed sales represented an increased share of 2008/09 revenues because of the sharp reduction in fertilizer sales.

7.1.3 Recommendations for improvements in the program

The only "new" recommendation the team received came from two interviewees who made very strong arguments for the introduction of farmer top-ups to introduce competition into the fertilizer voucher system. The basic voucher would have fixed values nation-wide, but firms would be able to ask farmers to pay variable top-ups to bring pricing of products more in line with their actual costs. They noted that this would only work if Government outlets were not subsidized in a disproportionate manner that enabled them to always sell below the private sector. Neither interviewee addressed how the "distance" incentive would be built into this system, but it would be possible to have variable voucher values based on distance and also allow top-ups. Note that STAM has also strongly advocated the use of top-ups for seed vouchers to encourage competition and pricing that better reflects quality differences.

All interviewees argued that the private sector must be allowed to sell fertilizer, stressing that continued exclusion may jeopardize the survival of the rural retail sector in general.

Most suppliers praised the efforts of CNFA to support the growth of commercial ties between distributors and agro-dealers and were actively pursuing such ties. Several had "graduated" from CNFA support for some dealers and were dealing directly with them rather than relying on CNFA for a credit guarantee—an intended result of the CNFA program.

Most of the other recommendations were the standard ones heard in 2007, but with minor changes reflecting subsequent experience in 2007/08 and 2008/09:

- Need to improve timing of tender awards (awards now more of a problem then tender announcement)
- Need to better evaluate capacity of firms submitting tenders to deliver and penalize those who default
- Need to exclude SFFRFM from the tender process
- Need to improve the quality and control of vouchers (changes have been made but new problems have been introduced)
- Need to improve the targeting of vouchers and better rationalize the quantities of seed and fertilizer going to each recipient (too much program fertilizer on the market and selling at prices below FOB costs)
- ADMARC/SFFRFM should be retained as active participants in distribution and retail sales in all markets BUT they need to improve management and should NOT participate in the tender process.

7.2 Fertilizer retailer perspective

7.2.1 Data issues and subsamples

Of the 230 retailers interviewed, 176 sold fertilizer in 2008/09, 184 in 2007/08 and 192 in 2006/07. Sixty-five (all government outlets) participated in the voucher program in 2008/09 and 113 participated in 2007/08 (64 government, 61 distributor, and 3 independent agrodealer outlets). Many of these 113 outlets were unable to provide reliable data on the 2007/08 season.

In deciding on an appropriate subset of observations for an analysis of changes over time we were confronted with two problems: (1) an unstable sample over time because of high levels of entry to and exit from fertilizer sales between 2006/07 and 2008/09 and (2) lack of information on prior seasons (2007/08 and 2006/07 in particular). The unstable sample makes it difficult to get a clear perspective of aggregate changes in the fertilizer retail sector over the time span of the subsidy program—in short, it is difficult to know if changes over time in key indicators are a result in changes in the composition of the sample or changes in overall behaviour of the retail sector. Testing for attrition bias between the two surveys revealed that many factors including retailer type, region, participation in the seed or fertilizer coupon programs in 2006/07, and the percent of shop profits that came from agricultural inputs were statistically significant predictors of attrition.

In an effort to control for this, many of the analyses are conducted on a subset of fertilizer retailers who sold fertilizer during all three campaigns. The second problem arose because of (a) high mobility among the management and sales staff who were available for the interviews and (b) lack of record keeping by many retailers. For example, 36 percent of the management staff interviewed at government outlets had been assigned to their current locations in 2008 or 2009 so they did not know what had happened at the same outlet during the peak period of the 2007/08 input campaign. This was also a problem with private sector outlets, particularly those of distributors. The combined effect of controlling for entry/exit bias and lack of knowledge about earlier campaigns results in a small sample of respondents with reliable data for several years—117 observations.

For the series of questions about participation in the 2008/09 voucher program, we have 65 respondents of which 63 provided reliable data (the government outlets that participated). For questions about participation in the 2007/08 voucher program, we have a sample of 73 respondents (those who participated and are able to answer the questions about what the outlet did at that time) comprised of 32 distributors, 38 government outlets, and 3 independent agrodealers. For the overall survey, we had 48 distributors and 4 independent agrodealers who participated in the 2007/08 voucher program, but 16 distributors and one agrodealer did not have personnel at their shops in 2008/09 who were knowledgeable about the 2007/08 season, substantially reducing the number of private sector observations available. Table 7.1 summarizes information on the size and composition by type of retailer for the various subsamples examined.

As a complement to the analyses with the reduced sample sizes, we also provide some descriptive information about retailers who sold fertilizers only intermittently and those eliminated from the analyses due to a lack of data on the 2007/08 campaign.

7.2.2 Impacts of the program on customer traffic and sales revenues

All private sector fertilizer retailers were asked whether the 2008/09 GOM decision to exclude the private sector retailers from the voucher program had had an impact on their business compared to the 2007/08 season. We had 78 valid responses with 38% (primarily the independent agrodealers) saying there was no impact and 62% (33 distributors/coops and 15 agrodealers) saying there was an impact. The difference between the two groups is related to the fact that agrodealers have never been able to participate directly in the voucher program, so few had benefited directly from the earlier voucher programs while the distributor outlets had been heavily involved in both 2006/07 and 2007/08.

Among those reporting an impact, 91% believed that it reduced the number of customers visiting their shop and the quantity of fertilizer sold while the others said customers and sales increased. The impact on total value of sales revenues was predominantly negative (87%), but 4% saw no impact and 9% thought their sales revenues increased.

If we restrict the sample to the 35 private sector fertilizer retailers who actually participated in the 2007/08 program (32 distributors and 3 agrodealers), we have 89% having experienced an impact and virtually 100% of those having experienced impacts reported negative ones in terms of customers, sales volumes, and sales revenues. Those reporting no impact were all distributor outlets.

Table 7.1 Subgroups of the fertilizer sample and composition by type of retailer

Characteristics of sample coverage	Type of Retailer	Number (%) of retailers
Sold fertilizer in 2006/07	Distributor/Coop Government Ind. Agrodealer Total	70 (36) 64 (33) 58 (30) 192 (100)
Sold fertilizer in 2007/08	Distributor/Coop Government Ind. Agrodealer Total	67 (36) 64 (34) 53 (29) 184 (100)
Sold fertilizer in 2008/09	Distributor/Coop Government Ind. Agrodealer Total	65 (37) 65 (37) 46 (26) 176 (100)
Sold continuously from 2006/07 through 2008/09	Distributor/Coop Government Ind. Agrodealer Total	63 (38) 63 (38) 41 (25) 167 (100)
Of the continuous, those able to answer questions about both 2007/08 and 2008/09	Distributor/Coop Government Ind. Agrodealer Total	41 (35) 38 (32) 38 (32) 117 (100)
Participants in the 2007/08 voucher program among those who were continuous and able to answer questions about 2007/08 & 2008/09	Distributor/Coop Government Ind. Agrodealer Total	32 (44) 38 (52) 3 (4) 73 (100)

Source: Retailer survey

7.2.3 Views on continuing to exclude the private sector from retail distribution

All retailers who sold fertilizer at least once during the past three years were asked their views on whether the GOM should continue to exclude private retailers from the voucher program. Responses reflected the self interest of the different types of retailers, but not in a unanimous manner. ADMARC/SFFRFM managers were 66% in favor of continuing the exclusion, but a surprising 35% thought the private sector should be allowed to participate. Distributors and agrodealers views were more one-sided with 86% of the former and 78% of the latter being against exclusion. Cooperatives were evenly split between the two points of view.

A variety of reasons were provided to support the different views, but those in favor of allowing the private sector to participate generally cited the need to provide farmers with as many outlets as possible to increase fertilizer availability and reduce lines. Those opposed (primarily the ADMARC respondents) felt that there was more room for fraud when distribution went through the private sector. This latter argument is not well supported by information from focus group interviews about farmers having to offer “tips” to ADMARC agents to collect their fertilizers this year, nor by the “loss” of 12,016 MTS of fertilizer (7% of total supplies) in 2007/08 that could not be accounted for by ADMARC (LU final report, April 2008).

7.2.4 Problems encountered with implementing the voucher program: 2007/08

We focus our analysis on the 2007/08 campaign in which both the public and the private sector participated and then provide a short overview of ADMARC/SFFRFM views on how the 2008/09 campaign was implemented. As noted earlier, the number of observations for this analysis is quite limited due to many respondents inability to report on the 2007/08 season for their outlet and a few additional observations lost because respondents did not answer these specific questions.

As we did for the seed program, we asked about three types of problems: overall stock outages, shortages of specific products, and long lines and compared the results by type of outlet (government vs. private sector). Results are shown in Table 7.2. The only problem that was statistically different across types of outlets was the problem of long lines, more common for the private sector than for government shops interviewed.

The differences in the prevalence of problems were also examined across regions. The only statistically significant difference found applied to the stock outages, which were much less common in the North (19%) than in the South (42%) and the Center (52%).

To examine the severity of the problem, we asked respondents to report the number of days that each of the problems was encountered and compared means across the government and private sector outlets. Although the results need to be interpreted with care because of the limited number of observations, the government outlets appear to have experienced more prolonged problems with stock outages (19 vs 8 days on average for complete outages and 36 vs 20 days for shortages of specific products) while the private sector has more prolonged problems with long lines (an average of 28 days vs. 20). The difference for product outages was statistically significant (t-test) at the 0.07 level; the others were not significant at the 0.10 level.

Table 7.2 Prevalence of 2007/08 voucher sales problems

Problem	Overall sample (% having a problem)	Private Sector (% having a problem)	Government outlet (% having a problem)
Fertilizer stock outage	36%	31%	40%
Missing specific products	64%	69%	59%
Long lines	81%	97%*	66%

Source: Retailer survey.

*Indicates the difference between the public and private sector was statistically significant (chi square .05 or better).

We compare the duration of the problems encountered across years for the small group of ADMARC outlets providing data for both years. The number of observations was less than 20 for each problem area, making it difficult to find any statistically significant differences. The average number of days of general stock outages was lower by 5.5 in 2008/09 while average days of selected products not being available was similar (1 day lower in 2008/09). By contrast, the average number of days with long lines increased by

5.5 between 2007/08 and 2008/09. The long line increase is likely a result of ADMARC being the only outlet distributing fertilizers in 2008/09. The two changes of 5.5 days were statistically significant at the 0.10 and 0.12 levels respectively (t-test).

Another set of problems that fertilizer retailers encountered dealt with fraudulent coupons. We identified three types of fraud: presenting a fraudulent coupon, presenting more than the authorized number of coupons, and having a non-authorized customer present a coupon.

Table 7.3 Prevalence of 2007/08 Voucher Fraud Problems

	Overall Sample (% having a problem)	Private Sector (% having a problem)	Government Outlet (% having a problem)
Fraudulent Coupon	48%	64%*	32%
More than authorized number of coupons	42%	55%*	29%
Unauthorized coupon holder	38%	44%*	32%
Any Fraud	69%	91%*	45%

Source: Retailer survey

*Indicates the difference between the public and private sector was statistically significant (chi square .05 level of significance or higher).

We also examined the difference across regions. There were no statistical differences found in any of the categories of fraud.

8. Summary of key findings and recommendations

Although the primary objective of AISP is to improve food security by assisting farmers to increase maize yields and incomes, a secondary objective is to build a reliable input distribution system with an appropriate mix of government and private sector services. Achievement of a reliable input distribution system requires effective dialog between the government and the private sector. The progress made toward the secondary objective since the 2006/07 campaign which integrated the private sector into a large scale agricultural input system differs for the seed and fertilizer subsectors.

Important progress has been made in the seed subsector as a result of the AISP. More than 5000 tons of subsidized seed was distributed through a range of retail outlets in both 2007/8 and 2008/9, and the share of hybrids rose from 53% to 84%. The private sector estimates that effective demand for formal sector maize seed is double pre-AISP levels. The seed association, STAM, has played an effective role in increasing the professional capacity of its members and dialoguing with government. To further improve the system, seed suppliers were unanimous in calling for the uniform use of top-ups to permit price competition and allow suppliers who do have better quality seeds to be paid for this quality.

Important progress was also made in the fertilizer subsector. There have been improvements in tendering procedures and increased private sector involvement in importation. Through 2007/08 the private sector also expanded its participation in subsidized fertilizer sales, expanded its distribution networks and was developing innovative partnerships with independent agro-dealers. The private sector also responded to the financial incentive provided by government to expand geographic coverage to include remote locations.

However all the progress made toward harnessing the capacity of the private sector for fertilizer distribution since 2005/6 was unwound by the unexpected decision of GOM in November 2008 to rescind the private sector's authorization to distribute fertilizer in return for vouchers. Not only did the decision undermine hard-won confidence in transparent dialog between the public and private sectors, but the timing of the decision could not have been worse in terms of the financial harm imposed on the private sector. Contracts had already been awarded, fertilizer imported and paid for etc. Because the private sector could not sell subsidized fertilizer they were also placed at unfair disadvantage in relation to subsidized seed sales because farmers want to procure the two types of input at the same location at the same time. Ironically, the private sector companies who were most negatively affected by the Government's decisions were the ones who had done most to respond to the government's desire for expanded access in rural areas – fertilizer importers with distribution networks. Those private sector importers specializing solely in suppling government were unaffected.

The immediate result of the Government's decision, besides loss of credibility with the private sector, was the dismantling of private rural fertilizer and related outlets to pre-2007/8 levels. There have been reports that farmers faced increased demand for illegal "tips" at some government outlets, longer waits when stock outs occurred, and lack of choice in seed varieties when government depots only distributed one variety at a time for reasons of administrative convenience. Farmers also risk diminished access to agricultural inputs for the dimba season in areas where the closure of private sector outlets has occurred, as most government outlets in rural areas only operate on a seasonal basis.

The longer-term consequence is lack of credibility in the government in regard to its commitment to develop a commercially viable fertilizer input sector rather than one where the private sector is limited to contracts to supply government and farmers are dependent for access to subsidized inputs on a state monopoly.

A number of improvements can be made to reduce costs and increase private sector effectiveness in importation of fertilisers:

- Improve timeliness in fertilizer supply by awarding contracts in line with international quotation deadlines;
- Take full account of conditions of supply, not just lowest price;
- Follow tender award committee recommendations or provide transparent reasons for not doing so;
- Impose penalties on companies that default on awards;
- To avoid conflicts of interest, Government-owned agencies should not be allowed to bid for government contracts;
- Make payment for contracts in the same currency that fertilizers are internationally traded, or guarantee an exchange rate;

If in the future, GOM should seek to return to a policy of integrating the private sector in rural distribution of subsidized inputs, and can find some way to signal renewed credibility, then there are a number of improvements that can be made to increase private sector effectiveness:

- Many of the recommendations for tender awards for fertiliser importation are also relevant to contracts for private sector involvement in fertilizer distribution:

    - improved timeliness,
    - clear guidelines and transparency,
    - penalties for default, and
- Continue a variable voucher redemption rate for remote locations, or allow a flexible top up;
- Transfer voucher printing to an international company to reduce leakage and/or fraud;
- Eliminate supplementary voucher distribution;
- Insist on greater accountability for “lost” vouchers from government outlets.

Malawi’s AISP has been frequently cited by the news media as a model program for turning around the very serious food security situation that prevailed in the country during the early 2000s and there is good evidence that the seed subsidy part of the program has made a major contribution to moving farmers toward more productive maize varieties BUT the continued high level of policy uncertainty associated with year-to-year changes in the way that private sector input suppliers are allowed to contribute to the overall effort—particularly decisions made in 2008/09 with respect to fertilizer sales—do not put the program in the position of a potential role model when it comes to building private sector capacity capable of providing reliable, long term input supply to all farmers—an essential building block if the government is to phase out its costly, direct support to the input supply and distribution program and begin to reduce the subsidy before it becomes a major drain on the national budget.