

Private Sector Participation in the Farm Input Subsidy Programme in Malawi, 2006/07 – 2011/12

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Evaluation of the Farm Input Subsidy Programme (FISP), Malawi

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Abstract: The involvement of the private sector in the FISP has changed over the life time of the programme with increasing participation in fertilizer procurement, inclusion and exclusion in fertilizer retail sales, increased participation in seed sales and increased participation in the transportation of fertilizers to various outlets in Malawi. This paper documents changes in private sector involvement in various aspects of the programme since 2005/06 and identifies benefits and challenges of participation of the private sector in the implementation of the programme. The paper reviews the experience of private sector participation using data from the Logistics Unit and household and community surveys conducted in 2006/07, 2008/09 and 2010/11 agricultural seasons. The analysis shows that commercial sales of fertilizers although lower than the pre-subsidy levels have been increasing suggesting that the programme has in the medium term stimulated demand for fertilizers in Malawi. This has occurred at a time when the private sector has increasingly participated in the procurement of subsidy fertilizer but been excluded from retailing of subsidy fertilizers. The seed component of the subsidy programme that has always involved the private sector has attracted additional seed growers and expanded the number of varieties for maize seeds and legumes.

1.0 Introduction

The implementation of the Farm Input Subsidy Programme (FISP) in Malawi since the 2005/06 agricultural season has involved the interaction of the Government of Malawi, the private sector, the development partners, Civil Society Organisations (CSOs), non-governmental organisations, traditional leaders and smallholder farmers. These have played various roles in the implementation and success of the programme. The private sector has played a critical role in the procurement, transportation and retail of farm inputs, but their involvement in the programme has changed over time. The private sector is involved in several aspects of the subsidy programme including the procurement of fertilizers, the transportation of fertilizers to various markets, the retail sale of fertilizers, and the production and sale of improved seeds.

There are benefits for the inclusion of the private sector in the implementation of a large and nation-wide agricultural input subsidy programme as noted in (Imperial College *et al.* 2007). First, it is believed that most of the activities can be done more efficiently by the private sector which is less prone to the bureaucracy associated with state delivery of services. Secondly, the involvement of the private sector is seen as a strategy of developing the private market system especially in remote areas where the incentives for private sector investment in markets are weak. Thirdly, the involvement of the private sectors allows the Government to use scarce resources on other activities, by reducing the cost of the subsidy to government. Fourthly, the participation of the private sector in input retailing reduces the displacement effects of the input subsidy programme.

The paper is organized into five sections. The next section reviews the nature of private sector participation in the input subsidy programme in the fertilizer and seed components of the programme. Section 3 documents the experiences of private sector participation in the subsidy programme between 2006/07 and 2011/12 agricultural season. We highlight the nature, extent and trends of participation in various aspects of the programme using national level data, community and household survey data. Section 4 highlights the challenges and opportunities for greater private sector participation in the implementation of the subsidy programme. In section 5, we conclude and highlight the issues and options for improving private sector participation in the implementation of the subsidy programme.

2.0 Nature of Private Sector Participation in Subsidy Programme

The private sector participates in the subsidy programme in various ways in the fertilizer and seeds components of the programme. On one hand, the relative roles of the private sector in the fertilizer component of the programme have varied over time as regards their participation in and exclusion from retail sales while remaining important partners in the procurement of fertilizers for the programme and commercial sales. On the other hand, private sector participation in the seed component of the programme has been consistent. Apart from participation in the subsidy programme, the private sector also procures fertilizers for commercial sales in various market outlets across the country.

2.1 Fertilizer Markets

2.1.1 Procurement of Fertilizers

School of Oriental and African Studies *et al.* (2008) categorise the private firms involved in procurement of fertilizers into large/well established and small/new entrants, which are members of the Fertilizer Association of Malawi. The private sector firms participate in the procurement of fertilizers for the programme in a competitive tendering process. In addition, two state-owned enterprises, the Agricultural Development and Marketing Corporation (ADMARC) and Smallholder Farmers Fertilizer Revolving Fund of Malawi (SFFRFM), also take part in the fertilizer tendering process. Overtime, the business opportunities in the supply of fertilizers to the programme has led to new entrants in the importation of fertilizers. Dorward *et al.* (2010) note that there has been increased participation of the private sector in the supply of fertilizers to the programme, be it in terms of number of players and the relative volume handled by the private sector relative to volumes handled by the state-owned enterprises or parastatals. Most importantly, private sector participation in the procurement of fertilizers has been consistent since the programme started in 2005/06. There has been growing interest in the supply of fertilizers to the programme. Logistics Unit (2012) shows that in the 2011/12 season, 65 enterprises submitted bids to supply fertilizers to the subsidy programme of which 20 were awarded contracts an increase from 11 companies in 2007/08 season (Logistics Unit 2008).

2.1.2 Distribution and Transportation of Fertilizers

The other important role played by the private sector in the implementation of the subsidy programme is the transportation of fertilizers from the national depots to the retail outlets in various parts of the country. There is no participation of state-owned

enterprises in this activity, and this service is purely provided by private transporters through competitive bidding. The transporters of fertilizers from depots to unit markets are selected by the Ministry of Agriculture through a bidding process (Logistics Unit 2008). In the 2011/12 season, a total of 23 transporters participated in the distribution of fertilizers from SFFRFM depots to various unit markets across the country (Logistics Unit 2012) compared to 16 transporters in 2008/09 season (Logistics Unit 2009).

2.1.3 Retailing of Fertilizers

Smallholder farmers redeem their coupons at various retail markets across the country. Although the private sector plays a dominant role in the procurement of fertilizers, its participation in fertilizer retailing to smallholder farmers under the subsidy programme has varied with the private sector participating in the 2006/07 and 2007/08 agricultural seasons only (Dorward and Chirwa 2011). In these two seasons, smallholder farmers were able to redeem fertilizer coupons at some of the major retailers of fertilizers, but smallholder agro-dealer sellers were excluded in the redemption of fertilizer coupons. Otherwise, ADMARC and SFFRFM have been the market outlets through which smallholder farmers have redeemed their subsidy fertilizer coupons.

2.2 Seeds Markets

The private sector has been a major player at various stages in the implementation of the seeds component of the subsidy programme. Its inclusion in implementation, both in terms of procurement and retailing of seeds, has been consistent since the commencement of the programme in 2005/06 and since the 2006/07 season with the inclusion of the small-scale agro-dealers in the redemption of seed coupons (Dorward and Chirwa 2011). The seed industry comprises the growers and retailers. The growers form the Seed Trade Association of Malawi (STAM) and are classified by ownership into international firms and domestic firms. There are six seed growers in Malawi, all of which participate in the subsidy programme. The international firms include Pioneer and Monsanto who specialise in hybrid maize, and Pannar and Seed Co specialising in both hybrids and open pollinated varieties (OPV). The domestic firms specialize in OPVs and legume seeds and include Funwe, Demeter and Association of Smallholder Seed Multiplication Group (ASSMAG). The retail sector of the seed industry consists of seed growers' distributor outlets, agro-dealers, cooperatives, supermarkets and parastatals (ADMARC and SFFRFM).

2.2.1 Seed Production and Wholesaling

Seeds for the subsidy programme are supplied by the private international and domestic firms, but there have also been changes in the supply of seeds to the programme. Initially, the private companies were awarded contracts to supply seeds to the programme and these contracts were awarded to both large international and small-scale domestic firms including smallholder seed multiplication groups to supply hybrid and OPV maize seeds and legumes to the programme. In the 2007/08 season, six growers of seeds participated in the supply of seeds to the subsidy programme with one specializing in hybrid seeds, two in both hybrids and OPV, and three specializing in OPV seeds.

2.2.2 Retailing of Seeds

As noted above, there has been limited variation in the participation of the private sector in the retailing of subsidized seeds under the subsidy programme. The delivery of the seed component of the programme has been consistent with the promotion of private sector development in input markets. In 2005/06 season, all the distribution and retailing of seeds under the subsidy programme was done through ADMARC and SFFRFM (Imperial College *et al.* 2007). However, since the 2006/07 season, seed procurement has been handled purely by the private sector, and seed suppliers have been distributing the seeds to retailers (parastatal and private sector retailers) across the country. Logistics Unit (2008) notes that maize seed dealer outlets were unrestricted and seed producers entered into various arrangements with small scale input agro-dealers and retail chain stores in addition to ADMARC and SFFRFM outlets.

3.0 Experiences of Private Sector Participation from 2006/07 – 2011/12

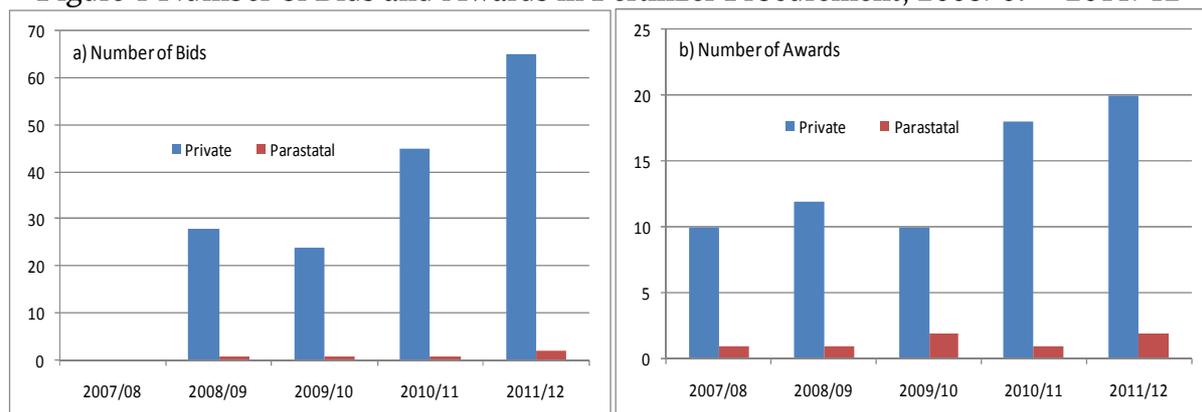
The analysis of the role of the private sector in the implementation of the subsidy programme is based on a review of reports by the Logistics Unit (2006 – 2012) and the analysis of survey data collected from smallholder farmers and communities for the 2006/07, 2008/09 and 2010/11 agricultural seasons.

3.1 Fertilizer

3.1.1 Procurement

Figure 1 presents the trend in private sector participation in the procurement of fertilizers under the subsidy programme. There are two parastatals involved in the procurement of fertilizers, ADMARC and SFFRFM, but only SFFRFM has been active in the bidding while ADMARC has benefited from uncompetitive allocation as a parastatal except in 2011/12 where it also appears as a bidder. There are increasing trends in both the number of private sector bidders interested in procuring fertilizers and the number of bidders who were awarded contracts to supply subsidy programme fertilizers particularly from the 2009/10 season. The number of interested private bidders increases from 24 companies in 2009/10 to 65 companies in 2011/12. The subsidy programme has over time attracted new companies whose traditional business is not importation of agricultural inputs. Similarly, the number of successful awards of contracts has also increased from 10 private companies in 2009/10 to 20 private companies in 2011/12. With respect to parastatals, SFFRFM has always participated and succeeded in the supply of subsidy fertilizers while ADMARC has only been awarded contracts to supply in 2009/10 and 2011/12 agricultural seasons.

Figure 1 Number of Bids and Awards in Fertilizer Procurement, 2008/09 – 2011/12

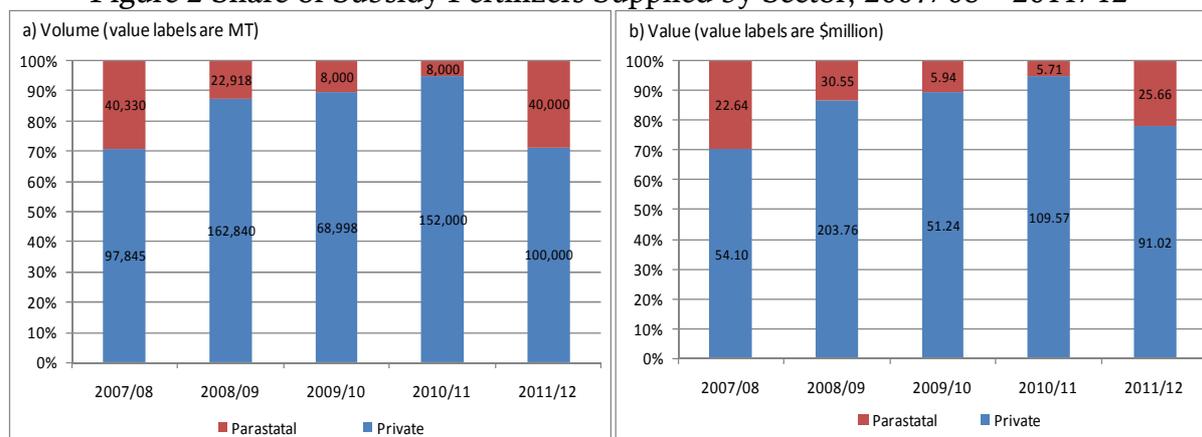


Source: Logistics Unit (2008, 2009, 2010, 2011, 2012)

Apart from the entry of other players in the supply of fertilizers under the programme, there have also been notable exits such as the National Association of Smallholder Farmers of Malawi (NASFAM), Rab Processors and Yara who participated in 2006/07 but have since not continued to participate in the programme (Kelly *et al.* 2010). Yara closed down its international representation in Malawi, turning over an exclusive right to import Yara fertilizers to Agricultural Resources Limited.

Figure 2 shows the share of fertilizers supplied to the programme by the private firms and parastatals in terms of volume and value of supplies. Panel (a) shows steady increase in the volume accounted for by the private sector between 2007/08 and 2010/11 rising from 70 percent to 95 percent. However, in 2011/12 the private sector share fell to 71 percent. In panel (b), there is a similar trend in the share of the value of supplies accounted by the private sector, increasing from 71 percent in 2008/09 to 95 percent in 2010/11 and fell to 78 percent in 2011/12. In monetary terms, the highest realised value to the private sector occurred in 2008/09 amounting to \$203.75 million, consistent with the high volume procured by the private sector but also reflecting high international fertilizer prices.

Figure 2 Share of Subsidy Fertilizers Supplied by Sector, 2007/08 – 2011/12

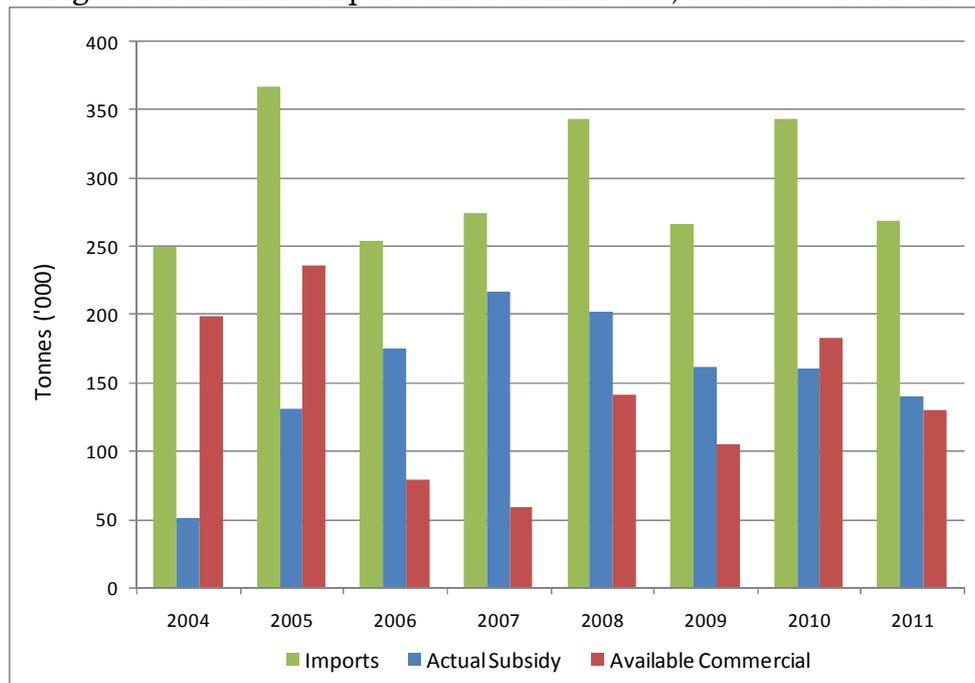


Note: The figures are new procurement during the season.
Source: Logistics Unit (2008, 2009, 2010, 2011, 2012)

The private companies also continued to procure fertilizers for commercial sales. However, due to difficulties in obtaining commercial sales data from the private sector,

we use import figures to extrapolate the available fertilizers for commercial sales after accounting for subsidized fertilizers. The official import data include fertilizers for both estates and smallholder farmers. Figure 3 shows the trends in imports, disaggregated between subsidy fertilizers and fertilizers available for commercial sales using industry data from 2004 to 2006 (School of Oriental and African Studies *et al.* 2008) and NSO import data from 2007. The trend in the fertilizers available commercial sales after subtracting the subsidy from imports shows a marginal increase between 2004/05 and 2005/06 season and a sharp decrease in 2006/07.¹

Figure 3 Fertilizers Imports and Fertilizer Use, 2004/05 – 2011/12



Source: National Statistical Office (2009) – Statistical Year Book Data Set; Dorward and Chirwa (2011) and School of Oriental and African Studies *et al.* (2008).

After falling in 2005, the trend in fertilizers for commercial sales from 2006/07 is increasing availability of commercial fertilizers in addition to increases in total imports of fertilizers. The available commercial fertilizers in 2008/09 are still below the 2004/05 level (the year before the commencement of the subsidy programme). A small reduction in subsidized fertilizer between 2007/08 and 2008/09 is associated with a substantial increase in the quantity of fertilizer available for commercial sales in 2008/09. There is a decline in importation of fertilizers and availability of commercial fertilizers in 2009/10 but an increase in imports and available commercial fertilizers in 2010/11 while the subsidy levels remained unchanged. The decline in 2009/10 is also associated with a sharp decline in the price of burley tobacco. Chirwa (2011) notes that 2008/09 prices for burley were significantly low towards the end of the marketing season compared to three previous seasons. This might have led to reduced demand for commercial fertilizers.

¹Industry data on total fertiliser sales from 1998 to 2006 as reported in School of Oriental and African Studies *et al.* (2008) are not consistent with NSO import data over the same period, and are on average around 80,000mt per year higher. If this continues from 2007 then commercial sales would be around 80,000mt higher than indicated in figure 3. It should also be noted that annual estimates on sales may not be accurate due to carry forward of stocks, but these should average out over two or more seasons.

Interestingly, available commercial fertilizer in 2010/11 was more than subsidized fertilizer. The subsidy programme in the 2010/11 season excluded tobacco fertilizers, and the increase in the available commercial fertilizers may reflect lower displacement due to the focus of the programme on maize fertilizers. As noted in School of Oriental and African Studies *et al.* (2008), the subsidy on tobacco fertilizers had higher displacement than the subsidy on maize fertilizers. Then, in 2011/12 there is another drop in imports, subsidized fertilizers and available commercial fertilizers. Tobacco was also excluded in 2011/12 but the decline in available commercial fertilizer may be partly due to the collapse of tobacco prices in 2010/11 season which has led many smallholder farmers to abandon tobacco production in the 2011/12 season. The 2011/12 crop estimates show that tobacco production is expected to decline by more than 36 percent. Except for bad years for tobacco, these results show that there has been overall increase in fertilizer importation and increase in the fertilizers available for commercial use, suggesting that after an initial decline the subsidy programme might have stimulated fertilizer use.

3.1.2 Fertilizer Retail

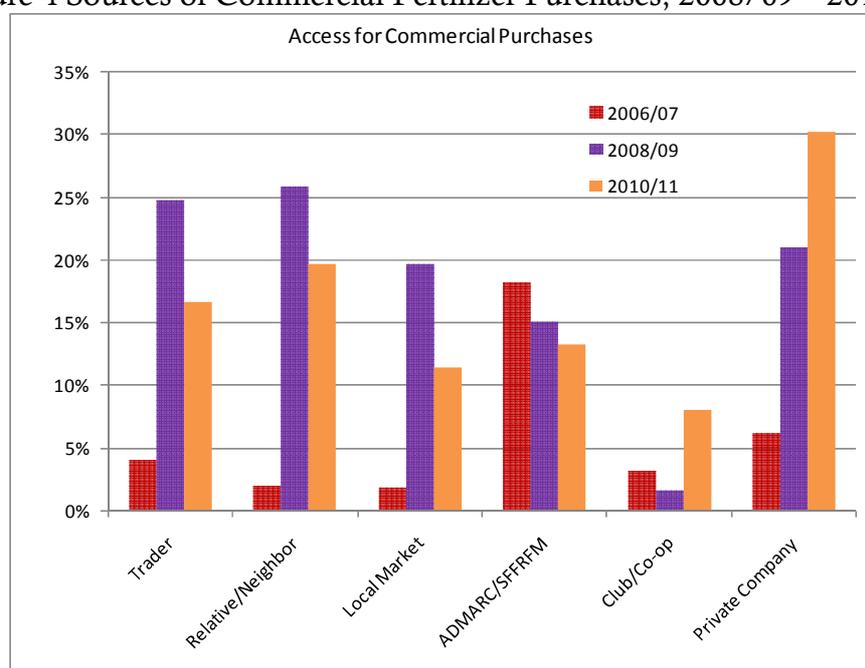
There are several players in the fertilizer retail market including importer-managed outlets, cooperative-managed outlets, chain stores and supermarkets, agro-dealers and parastatals unit markets (Kelly *et al.* 2010). The participation of the private sector in the retail marketing of subsidized fertilizers has been the most difficult aspect in relation to the development of the private input markets across the country. As noted above, the private sector has been allowed to redeem fertilizer vouchers only in 2006/07 and 2007/08 seasons. Those in favour of private sector participation in fertilizer subsidy retail sales point to several benefits including efficiency, freeing government resources, facilitating a strategy for promoting input markets in remote areas, broadening of choice of outlets for smallholder farmers, and reducing transaction costs and cost of queuing. However, opponents of private sector participation in subsidy fertilizer retail market argue that the private sector cannot be trusted as they may be exchanging coupons with other merchandise rather than fertilizers in the absence of an audit system², the available stocks by the private sector firms cannot be verified, high incidence of fraud and that it will be difficult to control the cost of the subsidy programme.

In the 2006/07 season, a total of 174,688 metric tonnes of subsidized fertilizers were sold to smallholder farmers with ADMARC and SFFRFM sales accounting for 72 percent of fertilizer sales and the private retailers accounting for 28 percent (School of Oriental and African Studies *et al.* 2008). The private sector continued to participate in retail of subsidized fertilizers in 2007/08 with the innovation of a remote market premium. According to Logistics Unit (2008), 'in certain extension planning areas (EPAs) within the districts where private sector involvement had been limited in the previous year, it was agreed to pay the retailers an additional sum of either MK 100 or MK 200 per voucher depending based on last year's sales figures for each EPA'. Kelly *et al.* (2010) find that the 'remoteness' premium encouraged the private sector to provides inputs in more locations in 2007/08 than in the previous season, although there was no evidence that such outreach was on a medium to long term basis.

² There were anecdotal claims in the media that some of the farmers were obtaining iron sheets in exchange of fertilizer coupons in some of the private sector input outlets.

Figure 4 shows the various retail channels from which households reported purchasing their commercial fertilizers in the 2006/07, 2008/09 and 2010/11 seasons. The proportion of households accessing private company market outlets for commercial purchases has increased significantly from about 6 percent in 2006/07 season to about 30 percent in 2010/11. This increasing trend is also evident in the use of club or farmer cooperative as a source of commercial fertilizers. The purchase of fertilizers on commercial basis from parastatals has been falling, from 18 percent in 2006/07 to about 13 percent in the 2010/11 season. These figures suggest that commercial sales of fertilizers have flourished in the presence of the subsidy programme. Although, the private sector has been excluded in the retail of subsidized fertilizers, the subsidy programme might have stimulated demand for commercial fertilizers, thereby promoting private sector development.

Figure 4 Sources of Commercial Fertilizer Purchases, 2008/09 – 2010/11

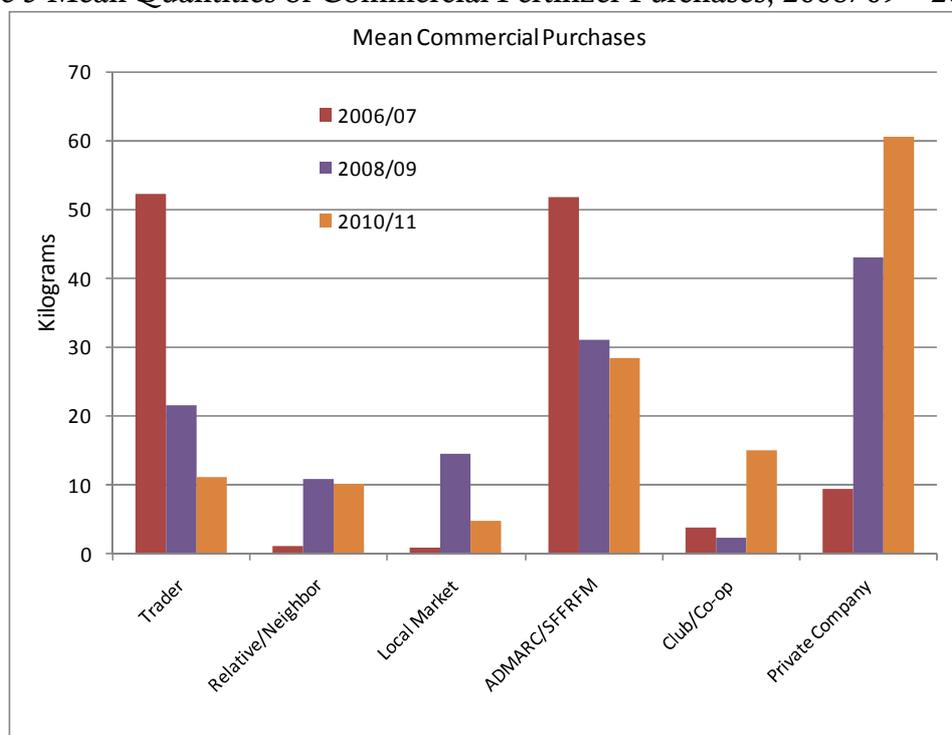


Source: Computed by authors based on AISS1, AISS2 and AISS3.

The evidence on household use of different marketing channels for purchase of commercial fertilizers is also supported by the average volumes of commercial fertilizers purchased by households in Figure 5. On average, the volume purchased from traders has fallen significantly from about 50 kilograms in 2006/07 to about 10 kilograms in 2010/11. Sourcing fertilizers from relatives or neighbours increased, but this may be fertilizers that could either have been subsidized and resold or received through remittances. There is an increase in average volumes purchased from the local market initially, but this declined between 2008/09 and 2010/11. There is a declining trend, however, in average commercial purchases from parastatals (ADMARC and SFFRFM). The increasing trends in the volume purchased from farmer cooperatives and private company outlets suggest positive private sector market development. For instance, in the 2006/07 season, households purchased on average 9 kilograms of commercial fertilizers, but this increases to 42 kilograms in 2008/09 and 60 kilograms in 2010/11 despite fertiliser price increases. This further suggests that the subsidy programme may have

helped in stimulating commercial demand for fertilizers, and certainly has not depressed them, as private marketing activities have continued to flourish in the medium term.

Figure 5 Mean Quantities of Commercial Fertilizer Purchases, 2008/09 – 2010/11



Source: Computed by authors based on AISS1, AISS2 and AISS3.

Interestingly, although the international fertilizer prices almost tripled in the 2008/09 season (Dorward and Chirwa 2011), there was an increase in the purchase of commercial fertilizers from private company retail shops. This is also consistent with the lower estimated displacement in 2008/09 season (Ricker-Gilbert and Jayne 2010). Similarly, Chirwa *et al.* (2011), using a matched panel note general increases in the purchase of commercial fertilizers between 2008/09 and 2010/11 among poor and non-poor households and a decrease in average subsidy fertilizers received by households.

These positive changes in private sector market development are also consistent with earlier studies. For example, Kelly *et al.* (2010) note that the perceived number of retailers selling only fertilizers increased while those selling both seeds and fertilizers fell between the 2006/07 and 2008/09 agricultural seasons, although community surveys revealed little change in the number of input suppliers. Nonetheless, there were also a number of exits from seed and fertilizer markets during the period. Similarly, a higher proportion of retailers revealed that their business performance in terms of sales and profits had increased between 2007/08 and 2008/09 (Kelly *et al.* 2010).

3.2 Seeds

The private sector has consistently participated in the distribution and retailing of seeds under the subsidy programme, as noted above. Improved maize seeds and legumes have been made available to the programme by the private sector. The retailing of seeds under the programme was liberalised since the 2006/07 season. This has meant players in the

seed value chain, including seed producers, agro-dealers and supermarkets, have been participating in the subsidy programme. Previous evaluation reports such as School of Oriental and African Studies *et al.* (2008) and Kelly *et al.* (2010) have pointed to the positive impact of the subsidy programme in promoting private sector businesses in input provision.

In terms of structure of the seed industry, there have been some limited changes in the number of seed growers, but the major changes in the structure seem to have occurred at retail level. Table 1 below provides the distribution of firms supplying various seeds to the subsidy programme and shows that the number of firms supplying seeds has increased from 6 in 2006/07 to 12 in 2011/12. Two new growers entered into the market in 2009/10, Seed Tech supplying maize hybrid and OPV, and National Association of Smallholder Farmers of Malawi (NASFAM) supplying groundnut seeds (Logistics Unit, 2010). In 2010/11 the number of firms supplying seeds to the programme increased to 9 with exit of Seed Tech, Agricultural Input Suppliers Association of Malawi (AISAM) and ASSMAG and entry of Panthochi supplying OVP maize seeds and Peacock supplying tested groundnut seeds to the programme (Logistics Unit, 2011). In 2011/12, 12 companies supplied seeds to the programme including re-entry of AISAM, ASSMAG, Seed Tech and a new entry, Pindulani (Logistics Unit, 2012). Although the number of firm has increased over the years, Kelly *et al.* (2010) note that this has not resulted in competitive pricing as the supply prices to the programme are negotiated between STAM and the government. However, this competition has just broadened the choice of seeds for the farmers.

Table 1 Number of Seed Suppliers to the Subsidy Programme, 2006/07 – 2011/12

Type of Seeds	2006/07	2007/08	2008/09	2009/10	2010/11	2011/12
Hybrid Maize Seed	3	3	3	4	3	5
OPV Maize Seed	5	5	4	4	4	6
Tested Bean Seed	-	-	-	4	2	5
Tested Groundnut Seed	-	-	-	4	4	10
Soya Bean Seed	-	-	-	2	2	3
Pigeon Pea Seed	-	-	-	1	1	5
Cow Peas Seed	-	-	-	1	1	1
Cotton Seed	-	-	2	-	-	-
Number of Firms	6	6	8	8	9	12

Note: Some of the firms are supplying more than one type of seeds, so the total number of firms is not the total for the columns.

Source: Logistics Unit (2008, 2009, 2010, 2011, 2012)

Nonetheless, the seed industry is highly oligopolistic, with new entrants just providing fringe competition. Data from Logistics Unit shows that the two largest suppliers of seeds to the subsidy programme account for 71 percent of maize voucher redemption and the three largest suppliers account for 87 percent of the maize voucher redemption. Similarly, in the legume seed market, the two and three largest suppliers to the subsidy programme account for 65 percent and 75 percent of the voucher redemption, respectively.

There is, however, an increase in the level of competition at retail level in terms of the number of competitors in the local communities. Kelly *et al.* (2010) find that agro-dealers had reported a 15 percent increase in competitors between 2005/06 and 2008/09 while distributors reported a 3 percent increase in the number of competitors. However,

community surveys revealed that only 22 percent of the communities believed that the number of seed sellers accessible in their community had increased while 57 percent maintained that the numbers had remained the same between 2006/07 and 2008/09 (Kelly *et al.* 2010).

Under the subsidy programme, smallholder farmers are provided with maize seed vouchers and flexible vouchers that they can use to purchase legume seeds. In 2007/08 and 2008/09, flexible vouchers were also allowed for maize seed redemption, but they have been restricted to legumes since the 2009/10 season. Table 2 presents the size of the seed component of the subsidy programme which provides indicators of private sector participation in the seed component of the subsidy programme. In terms of coupons redeemed, maize is the main component and when flexible vouchers were also accepted for maize seeds a high proportion of flexible vouchers were also redeemed for maize seeds. One reason for this was the problem of availability of legume seeds in the earlier seasons of the programme (School of Oriental and African Studies *et al.* 2008).

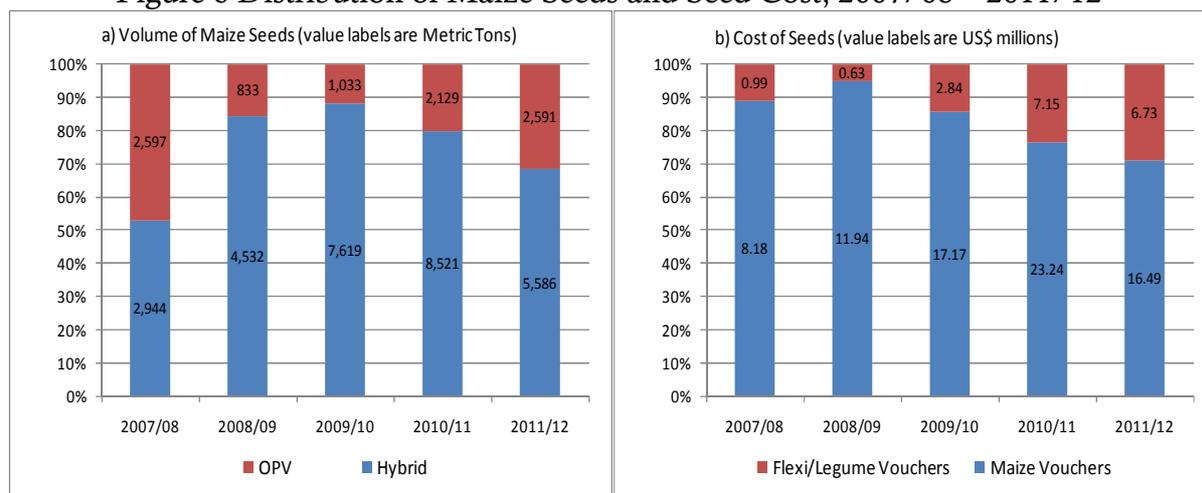
Table 2 Size of the Seed Component of the Subsidy Programme, 2007/08 – 2011/12

Variable	2007/08	2008/09	2009/10	2010/11	2011/12
Coupons Redeemed (N)					
Maize Coupons	1,603,302	1,561,329	1,614,070	1,988,066	1,376,216
Flexi Coupons – Maize	518,264	929,382	-	-	-
Flexi Coupons - Legumes	142,043	87,228	1,142,738	1,310,420	1,245,172
Seeds Distributed (MT)					
Hybrid Maize Seeds	2,944	4,532	7,619	8,521	5,586
OPV Maize Seeds	2,597	833	1,033	2,129	2,591
Legume Seeds	-	-	1,551	2,727	2,490
Cost of Seeds (\$ millions)					
Maize Seeds	8.18	11.94	17.171	23.237	16.487
Legume Seeds	0.99	0.63	2.837	7.147	6.734

Source: Logistics Unit (2008, 2009, 2010, 2011, 2012)

On average, the programme has distributed to smallholder farmers 5,840 metric tons of hybrid maize seeds, 1,837 metric tons of OPV maize seeds and 2,256 metric tons of legume seeds per year. There has been a steady increase in hybrid seeds obtained by smallholder farmers since 2007/08 until a fall in 2011/12. OPV maize seeds dropped substantially in 2008/09 but then increased steadily from the 2009/10 season. In terms of the costs, consequently the private sector business promoted directly by the subsidy amounted on average to US\$19.1 million per year in the past five agricultural seasons. Figure 6 shows the distribution of maize seeds by volume and costs. Hybrid maize seeds are the most dominant seed type redeemed by vouchers among smallholder farmers. Interestingly, after an initial drop in the share of OPV maize seeds, in the past 2 season there is increased demand for OPV maize seeds. In 2009/10, OPV maize seeds accounted for 11.9 percent of maize seeds, but the share rose to 31.7 percent in 2011/12 while hybrid maize accounted for 89.1 percent and 68.3 percent, respectively.

Figure 6 Distribution of Maize Seeds and Seed Cost, 2007/08 – 2011/12

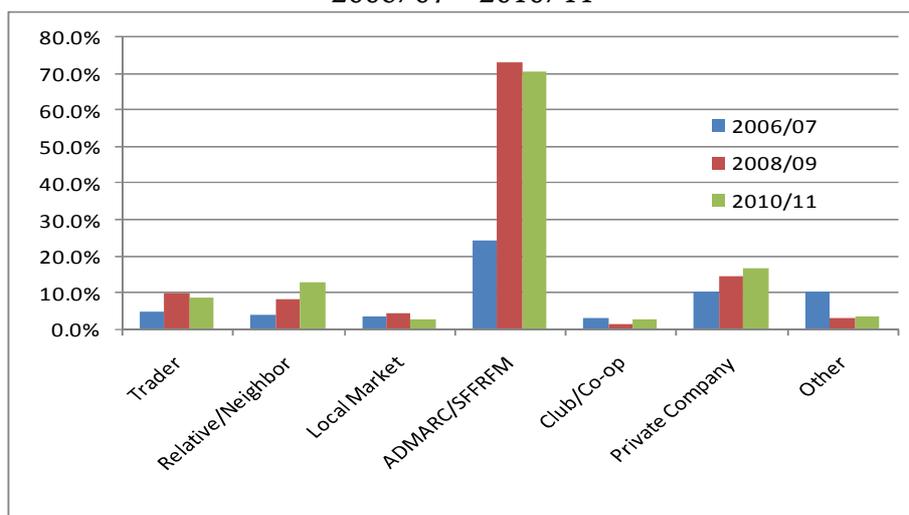


Source: Computed based on Logistics Unit (2008, 2009, 2010, 2011, 2012)

With respect to the relative cost of maize seeds and legume seeds (Figure 6(b)), there is an increasing share of legumes in the cost of the seed supplies obtained by smallholder farmers from the subsidy programme. With the increase in the number of seed growers providing legume seeds in the programme, the trend reflects substantial improvements in the availability of legume seeds in the market under the programme, such that legumes accounted for nearly 30 percent of the seed component in the 2011/12 season compared to only 5 percent in the 2008/09 season.

The role of the private sector in the marketing of seeds can be deduced from household survey data obtained in 2006/07, 2008/09 and 2010/11 seasons. Figure 7 shows the use of various market channels to access improved maize seeds (hybrid and OVP) by households in the survey years. The parastatals, ADMARC and SFFRFM, are the main retail markets from which smallholder farmers obtained their improved seeds, with about 70 percent of farmers utilising these retail outlets. With respect to private outlets, use of private companies by households to obtain improved seeds has been increasing from 10 percent of households in 2006/07 to 17 percent in 2010/11. There is also increasing use of relatives or neighbours as a source of improved seeds from 4 percent of households in 2006/07 to 13 percent in 2010/11. These sales through relatives or neighbour could be recycled seeds or remittance seeds offered for resale or subsidy seeds offered for resale.

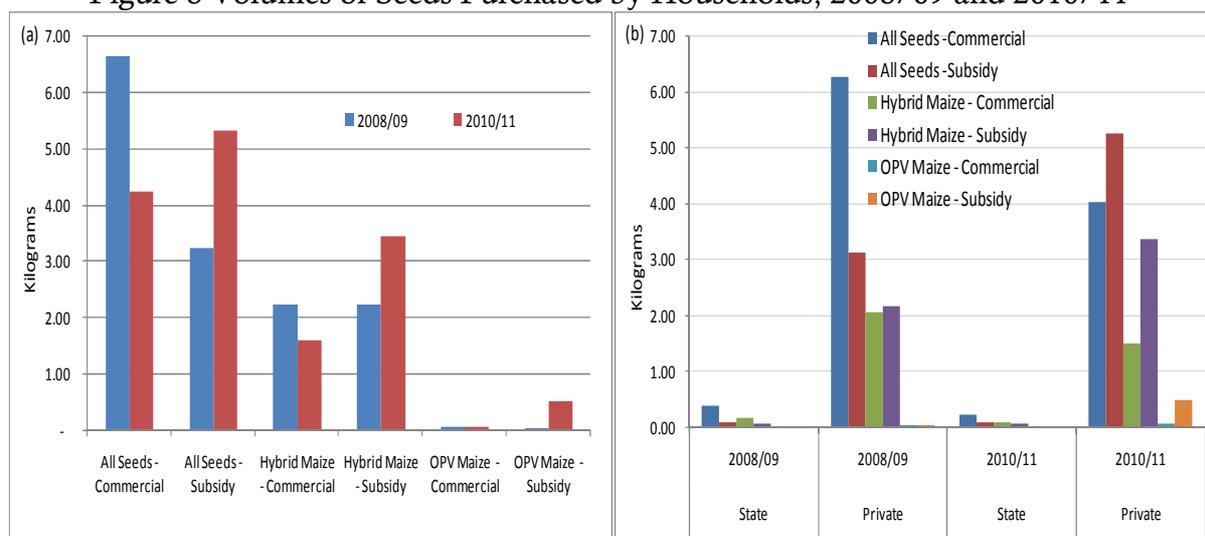
Figure 7 Households' Access to Improved Maize Seeds by Retailer, 2006/07 – 2010/11



Source: Computed by authors based on AISS1, AISS2 and AISS3.

With respect to quantities of seeds bought commercially or using the seed subsidy vouchers, Figure 8(a) shows an average decline per household of commercial purchase and an increase in subsidy purchase between 2008/09 and 2010/11. The 2010/11 figure also reflects the increase in the number of seed coupons provided under the programme compared to 2008/09 season. Farmers are also purchasing more hybrid maize seeds both commercially and under the subsidy programme compared to OPV maize seeds. While commercial purchases of OPV maize seeds have remained the same, for hybrid maize seeds commercial purchases declined from an average of 2.1 kilograms in 2008/09 to 1.6 kilograms in 2010/11 per household. In both cases of hybrid and OPV maize seeds, there is an increase in subsidy redemption. These declining trends suggest that the subsidy programme is crowding out commercial purchases, although the use of improved seeds has been increasing.

Figure 8 Volumes of Seeds Purchased by Households, 2008/09 and 2010/11



Source: Computed by authors based on AISS2 and AISS3.

With respect to private market participation between 2008/09 and 2010/11, Figure 8(b) shows that there was a substantial decline in average purchases of commercial seeds but a substantial increase in subsidized seeds purchases by households. Similarly, average commercial purchases of hybrid maize seeds fell but average subsidized purchases of hybrid maize seeds increased. In contrast, average purchases of commercial seeds from state marketing outlets marginally declined between 2008/09 and 2010/11 and subsidized purchases marginally improved. Hybrid maize seeds purchases from state marketing outlets, however, fell although subsidized purchases increased. Although, the proportion of households accessing the private market system is small, as observed above, the average purchases of seeds from the private market outlets are higher than average purchases from parastatal outlets.

Agro-dealers have played an important role in facilitating access to inputs in rural areas. Chinsinga (2011) notes that with FISP there has been an increase in the number of seasonal agro-dealers, a situation that has been supported by the practice of seed companies who collect the unsold inventories from contracted agro-dealers during the off-peak FISP period.

4.0 Challenges and Opportunities of Private Sector Participation

We have examined above the pros and cons of private sector involvement in the implementation of the subsidy program and discussed its consistent participation at procurement and retail level in the seed sector, and in procurement of fertilizers, but its exclusion in the retailing of subsidized fertilizers. Nonetheless, the involvement of the private sector poses challenges but also provides opportunities for achieving multiple development objectives and improving efficiency in the implementation of the programme. This section documents some of the challenges experienced with private sector participation and the opportunities that exist to improve implementation of the programme.

4.1 Challenges

4.1.1 Delays in Tender Awards

The awarding of tenders, particularly for supply of fertilizers to the programme has been one of the challenges of private sector participation. The longer the time it takes between submission of tenders and the awards of tenders the more likely prices are bound to change and this can lead to protracted negotiation about supply prices for fertilizers. There have been cases in which companies awarded tenders have been unable to supply at the tender prices due to increased costs of supply. However, there is evidence that this has improved over time. Kelly *et al.* (2010) note that most stakeholders in 2008/09 were of the view that the announcement of tenders improved but the tenders were awarded late. Dorward *et al.* (2010) argue that the delays in award of tenders increased private sector risks as both the prices of fertilizers and fuel had risen dramatically in the period between June 2006/07 and June 2008/09. There have been improvements in the timing of announcement of tender awards more recently (Dorward and Chirwa 2011).

4.1.2 Trust and Monitoring Systems

There is often a problem of trust between the private sector and the Government that has contributed to the continued exclusion of the private sector in the retailing of subsidized fertilizers. The lack of trust emerges from both sides. From the Government side, there are some in Government that believe that the private sector firms with their profit motive are likely to exploit their engagement to the detriment of smallholder farmers and public welfare. Chinsinga (2011) documents some of the profit and quick gain motives of some of the agro-dealers in input supply markets. There have been allegations, based on anecdotal incidents reported in the media but not substantiated, that some private sector retailers were accepting coupons in exchange for non-fertilizer items. This reinforced views of sceptics of private sector that the private sector was therefore not able to self-regulate its behaviour in the programme.

Others have also argued that when the private sector was involved in retailing of subsidized fertilizers, there was high incidence of tips paid by farmers. However, Kelly *et al.* (2010) find that the incidence of tips and malpractices were higher in parastatals than in private sector retails, although the differences were not statistically significant, and the incidents of accepted fake vouchers were higher in parastatals outlets. Furthermore, even with exclusion of the private sector in subsidized fertilizer retailing, smallholder farmers still report increased incidence of tips from ADMARC and SFFRFM outlets (Dorward *et al.* 2010; Dorward and Chirwa 2011). The mistrust of the private sector is also exacerbated by the absence of an audit system on the stocks movement of inputs as a way of detecting malpractices.

From the private sector's point of view, Government's inconsistent decisions on private sector participation in retail of subsidized fertilizers and delays in making inclusion or exclusion decisions characterize policy instability, creating uncertainty for private input market development. This was particularly the case in 2008/09 when a decision was made about private sector involvement and contracts for inclusion provided, but Government reversed the decision without prior notice (Kelly *et al.* 2010). By the time Government made the decision to exclude the private sector, the private companies had already stocked their retail shops in readiness for redemption of vouchers.

4.1.3 Vested Interests and Non-Compliance

The subsidy programme has attracted new entrants that were hitherto not interested in the fertilizer business, particularly from domestic companies, some just created to bid for contracts to supply fertilizers to the programme (Holden and Tostensen 2011). Some of these companies were highly connected to the political establishment, but when awarded contracts they had difficulties in fulfilling their deliveries. For non-established agricultural input suppliers, their main interest is the short-term gains from participation in the programme rather than the medium to long-term development of the input supply market. Chinsinga (2012) notes that most of the contracts in the provision of transport services were awarded to companies politically linked to the ruling party. Logistics Unit (2012) notes that although it became clear that some of the suppliers were unlikely to supply the Government continued to grant extensions and the final deliveries occurred in February 2012 instead of end October 2011. The existence of vested interests can be partly attributed as one of the reason for non-compliance with the terms of the fertilizer supply. Although there have been improvements in the timing of deliveries; late

deliveries were evident and this problem is attributed to the lack of penalty clauses in the contracts (Dorward *et al.* 2010; Dorward and Chirwa 2011; Logistics Unit 2011).

4.1.4 Collusion and Uniform Prices

One of the challenges in the seed component of the subsidy programme is the collusive behaviour of seed suppliers in deciding the supply price of seeds offered to the subsidy programme. Although the subsidy programme has attracted a number of players in seed production and supply, the pricing arrangement is tantamount to collusive pricing due to the desire by Government to have a uniform top-up for farmers (Kelly *et al.* 2010). There is no competitive tendering in the seed supply to the subsidy programme, in contrast to the fertilizer supply system. However, in subsequent years, allowance of variable top-up benefited some smallholder farmers. In 2010/11, seed companies were allowed to apply a discretionary maximum top-up of MK100 per maize seed voucher which had the same redemption value of MK1650 from the Government, and hybrid seeds providers applied the maximum top-up while only one OVP provider maintained the excess (Logistics Unit 2011; Logistics Unit 2012).

4.1.5 Inefficient Payment System

There is evidence that the payment system by the Government for supplies and services rendered to the programme by the private sector is inefficient. Logistics Unit (2012) report that some of the companies had to wait for 6 months to be paid after delivery of fertilizer supplies. Similarly, seed companies had outstanding invoices for three months in the 2010/11 season (Logistics Unit 2012). The Logistics Unit final weekly report for the 2011/12 programme indicates that Government still owes seeds, fertilizer companies and transporters for supplies and services provided during the 2010/11 subsidy programme. These delays in payments are likely to lead to high supply prices of inputs and services as suppliers factor in the risk of delayed payments in the prices.

4.2 Opportunities

Greater involvement of the private sector in the subsidy programme not only promotes private sector development in input markets but can also improve efficiency in the implementation of the programme. We highlight some of the opportunities that exist if the challenges noted above can be overcome.

4.2.1 Programme Efficiency

The increased involvement of the private sector provides the opportunity of increasing the efficiency of implementation of the programme. This can be achieved by increasing the number of outlets from which smallholder farmers can redeem their input coupons and broadening their choice of markets. The increase in the competition may consequently improve the quality of services at market outlets and reduce the incidence of tips at the markets. (Kelly *et al.* 2010) note that although the incidence of tips was not significantly different between parastatals outlets and private sector outlets, smallholder farmers were more likely to 'never pay tips' in private sector outlets. The increase in the number of outlets can also reduce the opportunity cost of queuing – a phenomena that has been evident in the programme.

4.2.2 Private Sector Investment in Rural Input Markets

The involvement of the private sector can also encourage private investments in rural input markets. This requires consistency and transparency in Government decisions. Such confidence building may bring about investments in rural markets. There are also opportunities for designing future private sector participation on the basis of performance based indicators such as verifiable expansion of retail outlet coverage. Alternatively, the private sector could be bidding to supply specific quantities of subsidized fertilizer in identified underserved areas identified by the Government. These areas can be served directly by the private companies or through private company's sub-contraction to agro-dealers. As the analysis above has shown, private sales of fertilizers have flourished suggesting increased demand for fertilizers, but it is not clear whether this has also facilitated the expansion of the private sector into poorly served areas. Such performance rewards and increased demand for fertilizers can provide incentives to the private sector to invest in more input market infrastructure on permanent basis or seasonal basis.

4.2.3 Storage Facilities

The other area in which the subsidy can exploit opportunities of private sector involvement is storage facilities. With the exclusion of the private sector in fertilizer retail, all the programme fertilizers have to be delivered at the SFFRFM depots for uplifting to markets. The exclusion of the private sector has created pressure on storage facilities at the depots and parastatals unit markets. This has introduced inefficiencies and heightened the incidence of stock outs in unit markets. Logistics Unit (2012) notes that the shortage of storage space in markets in the critical early months of the programme in 2011/12 meant that only 39 percent of the 63 percent available fertilizers was uplifted to unit markets. Furthermore, the limited storage capacity of SFFRFM depots in the past four years of private sector exclusion have led to congestion (Logistics Unit 2011; Logistics Unit 2012), a situation that can be alleviated by more involvement of the private sector in retail markets.

4.2.4 Other Opportunities

Other opportunities that can facilitate the participation of the private sector in input market development and benefit programme impact from private sector participation are targeting of beneficiaries, timing of coupon distribution and use of electronic vouchers. First, better methods of targeting can reduce displacement and therefore increase demand for commercial purchases. Dorward and Chirwa (2012) discuss some of the targeting options that have the potential to reduce displacements and the practical difficulties associated with various targeting approaches. Secondly, improvements in the timing of coupon distribution, by distributing earlier, can help farmers to plan for commercial purchases and thereby help commercial sales. Earlier distribution of coupons can bolster input sales as those that do not receive coupons and those that receive coupons but want to top-up would be certain about the commercial purchases. In this case involvement of the private sector could also offer opportunities for earlier purchase of inputs by farmers and hence more effective yield gains. Thirdly, there are also opportunities that may arise with the use of electronic vouchers which could enable the private sector to invest in electronic system resulting in shared costs, benefiting both government and private suppliers.

5.0 Conclusions

This paper set out to review the participation of the private sector in the implementation of FISP between 2006/07 season and 2011/12 season. We have utilized information from final implementation reports of the Logistics Unit and survey data collected in 2006/07, 2008/09 and 2010/11 seasons. We have noted that while the private sector has participated consistently in the subsidy programme since 2006/07, its participation in the fertilizer market – particularly retail market has been limited. In the fertilizer market, the private sector continues to play an increasing role in the importation and procurement of fertilizer for the subsidy programme, but has only been allowed to retail subsidized fertilizers in 2006/07 and 2007/08 seasons only. During the period the private sector participated in the programme, agro-dealers were excluded in the marketing of subsidized fertilizer. Otherwise, the retailing of subsidized fertilizers has been monopolized by parastatals, ADMARC and SFFRFM. In the seed sector, various players in the seed value chain including agro-dealers have been allowed to participate in seed production and retailing of subsidized improved maize seeds and legumes.

The main conclusion of the study is that although the subsidy has some negative impacts on private sector development in form of displacement in the short-run, in the medium to long term it appears to have been catalytic in raising the demand for fertilizers and improved seeds. The private sector in the fertilizer markets is increasingly the main supplier of fertilizers to the programme, and their exclusion from the retail market for subsidized fertilizers has not dampened demand for commercial fertilizers in the medium term. In the seeds market, the increase in the seed subsidy in from 2009/10 seems to be crowding out commercial sales. However, like the fertilizer market, in the medium to long-term the massive seed subsidy may stimulate demand for improved seeds as farmers witness the benefits of technology adoption.

In addition, both in the fertilizer and seed markets, there is an increase in the number of private sector players, although exits especially in the fertilizer market are evident. However, the challenge is to translate the increase in competition into reasonably priced inputs and quality of services offered to smallholder farmers in underserved areas.

There are benefits for expanding the role of the private sector in reducing programme costs, increasing efficiency and alleviating problems of storage capacity in parastatal markets but the involvement of the private sector will require mutual trust among stakeholders, systems of transparency and accountability and policy consistency and credibility. These conditions can create a conducive environment for private sector investments in input markets. As the demand for commercial fertilizers increase, assuming the trend continues, there may be scope for gradual reduction in the subsidy programme. However, this will require strategic investment in input markets by the private sector to sustain such demand.

While the size of subsidized fertilizers has been constant, the growing demand for commercial purchases by smallholder farmers should also provide incentives for the private sector to strategically position itself by expanding their network in underserved areas. This can easily be achieved by developing sustainable partnership with the agro-dealer network that exists in rural areas. There is also scope for increasing private

participation in the fertilizer retail market through performance based contracts to supply underserved areas.

Nonetheless, it is important to continuously monitor the impact of the subsidy programme on private sector markets and monitor the integrity and efficiency of the private sector. Chirwa *et al.* (2011) note that improving the efficiency and competitiveness of input suppliers is one of the conditions that can facilitate graduation from the subsidy programme at household, area and national levels. In particular, tracking the effects on commercial sales from smallholder farmers and input markets through periodic surveys should generate useful information for evidence-based decision making about private sector roles. Furthermore, the efficiency of the private sector needs to be studied from the lens of the structure of the market (players, their market power and vertical restraints), the behaviour in the market and the resultant benefits in terms of efficiency and smallholder welfare.

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