EVALUATION OF THE 2010/11 FARM INPUT SUBSIDY PROGRAMME, MALAWI

Report on Programme Implementation

September 2011

Andrew Dorward and Ephraim Chirwa

Executive Summary

This report presents a review of 2010/11 FISP implementation and of farmers' access to and use of subsidised inputs based on Logistics Unit implementation reports and extensive qualitative and quantitative field work in the country's major maize growing livelihood zones, covering 77% of all rural households.

In many ways the implementation of the 2010/11 FISP can be regarded as highly successful. As in previous years it overcome major logistical and coordination challenges to deliver very large numbers of small quantities of different inputs to farmers dispersed across the country in time for their use in crop production. A number of substantial and specific achievements and improvements over previous years are noted:

- Timeliness: purchase and delivery of fertilisers was more timely with much greater uplifts to markets in October and continued increase in November sales despite the absence of any significant brought forward stocks;
- Control of sales: as in 2009/10, the /11 programme achieved excellent control of fertiliser sales of 160,533 MT, just over the budgeted 160,000 MT - although 1.99 million maize seed packs were sold, nearly 25% over the budgeted 1.60 million;
- Seed sales: subsidised sales of improved seed included a wide range of different hybrid and OPV maize varieties, with larger (5 and 7.5 kg) packs totalling 10,650 MT of hybrid (80%) and OPV (20%) varieties and the majority of farmers (63%) getting the maize seed variety that they wanted. There was also continued strong growth in legume seed sales, amounting to 2,525 MT of groundnuts, soya, beans, pigeon pea and cowpea seed;
- Average fertiliser coupon receipt of 1.13 per households estimated across the sampled livelihood zones, with 0.68 maize seed coupons and 0.41 legume seed coupons. Converting this into national estimates is complicated by conflicting NSO and MoAFS estimates of the number of rural households and farm families, the former providing an estimate of 2.7 million coupons and the latter an estimate of 4.4 million coupons, to be compared with total disbursements of 3.2 million coupons and redemption of 3.18 million coupons.
- Regional distribution of coupons: the retention of the 2009/10 regional allocation of provides a largely equitable distribution of coupons and inputs per rural household in the three regions and has improved the geographical poverty targeting of the programme;
- Beneficiary identification: the system of open meetings for beneficiary identification, introduced in 2008/9, continues to be implemented and is generally recognised as offering significant improvements over systems used in previous years;
- Coupon targeting: in the sampled livelihood zones 75% of all rural households are estimated to have received one or more fertiliser coupons. This high rate of coverage, greater than the targeted number of beneficiaries, is achieved because of extensive sharing and redistribution of coupons from those registered as receiving two to those otherwise excluded, to the extent that 41% of households reported the receipt of one coupon (or the sharing of two coupons). This sharing is most prevalent in the Southern Region (47% of households) and least in the North (23% of households). As in 2006/7 but not 2008/9, female headed households were less likely than male headed households to receive one or more coupons (75% as compared with 80%)

and as in both 2006/7 and 2008/9, female headed household recipients received less coupons per household than male headed household recipients (although this differential appears to have been declining). Poorer households also appear to be less likely to receive coupons than less poor households and to receive fewer coupons per recipient (a pattern also found in previous years). Female coupon recipients comprised 47% of all recipients, as compared with registered female beneficiaries comprising 56% of all registered beneficiaries.

- Allocation and distribution processes: Open meetings for allocation and forma l distribution of coupons is reported by 80 and 96% of households respectively, and redistribution or sharing of coupons (described above) by 70% of households. Headmen and TAs are considered the most important players in coupon allocation and redistribution and, with agricultural extension staff, in coupon distribution. VDC members' roles vary more between areas and regions. Survey respondents do not report clear perceptions of particular target or beneficiary groups, but these were more clearly articulated by key informants and focus groups, in line with MoAFS criteria. There are general perceptions that the number of coupons issued has been falling over the life of the programme, and that the timing of coupon distribution has been improving. There is no clear trend in scoring on methods of fertiliser coupon distribution or on criteria for coupon allocation. Respondents generally score effective targeting of the poor as (on average) the most preferable basis for coupon allocation, closely followed by a universal but smaller (50kg) per household allocation. Both these approaches are on average preferred to current criteria, which are preferred to targeting more productive farmers.
- Coupon use and redemption: there are very limited reports in both the formal survey and focus group discussions of farmers buying and selling coupons, and the vast majority of coupons are redeemed for inputs which are then used on farmers' fields. There are however common reports in FGDs of diversion of coupons by agricultural staff and village headmen. There were also reports of some legume seed being consumed, this was particularly the case for soya seed where this was the only seed available. 9% of coupons were reported to require payment of a 'tip' for redemption (this might include payment for more rapid service) with tips between MK250 and MK500 per coupon. Mean payment for redemption of a bag of fertiliser was 536MK (MK36 above the stipulated MK500). Payments were lowest in the North and highest in the South. This may be associated with lower reported mean transport and waiting times and costs in the North. Coupon redemption was most commonly financed from savings (72% of households) and from 'ganyu' work (15%). However female headed and poor households' coupon redemption was less commonly financed from savings (59% and 51% respectively) and more commonly financed from ganyu (19% and 30% respectively). FGDs also reported sharing inputs, engagement in public work programmes (in the few cases that these were available) and even selling of coupons as strategies used by poorer households to benefit from coupon receipt despite financing difficulties.
- Technical advice: As in previous surveys, a relatively small proportion of farmers (14%) and coupon recipients (15%) report that they have received extension advice on subsidised input use, and receipt of such advice is less common among female headed. The usefulness of this advice when received is generally scored on average as moderately useful.
- Diversion: although accurate and reliable information on diversion of coupons and subsidised inputs is very difficult to come by, calculations linking disbursement and redemption records and survey estimates allow rough estimates of patterns of coupon and input flows and use. These suggest that the scale and scope of diversion of coupons and subsidised inputs has been markedly reduced over the last two years – partly but not only through increased control of sales mentioned above – and this is improving the effectiveness and efficiency of the programme and reducing its cost.
- Programme costs: Overall costs of the programme are estimated from records summarised by the Logisitics Unit together with some estimation of unrecorded costs. The 2010/11 FISP budget was 19.7 billion Malawi Kwacha (US$130 million), 62% of the MoAFS budget and 6.8% of

the national budget. Documented 2010/11 expenditure on FISP was MK23.4 billion (US$154 million), including donor funded activities and excluding farmer repayments for fertiliser redemption and various implementation costs. After addition of estimated operational costs and deduction of farmer repayments, and MK3.3 billion donor funding this required an estimated MK19.6 billion government funding.

Building on the achievements and issues noted above, the following new and continuing challenges are highlighted as the programme moves forward:

- Timeliness: overcoming delays in fertilisers delivery to markets that result from shortages of storage space in those markets and in depots, transport and restocking constraints in the short sales period, and late delivery of coupons to districts and issue to beneficiaries, as a result of slow finalisation of registered beneficiaries;
- Control of sales and diversion: improving security processes and coupon (or other, for example, electronic system) security features;
- Seed sales: improving availability to farmers of quality stocks of the legume seeds they want;
- Beneficiary identification: validating farm family registers (and the total number of farmers) and improving transparency, representation and accountability and reducing suspicion in beneficiary identification processes;
- Good practice: extending more widely good practices of some districts, EPA and village procedures and reducing bad practice in others;
- Beneficiary targeting: addressing continuing difficulties in operationalising definitions of targeted beneficiaries in the context of large numbers of people satisfying targeting criteria relative to the number of coupons. The widespread sharing of coupons does not address this fundamental difficulty (although it may favour the excluded poor it penalizes the poor with coupons as they tend to be the ones that share their coupons);
- Coupon redemption: addressing the continuing difficulties many farmers face in redeeming coupons, particularly fertiliser coupons, as a result of time spent in queues and demands for 'tips' either to redeem coupons or to get timely service;
- Extension advice: improving coupon recipients' access to technical advice on efficient input use;
- Diversion: reducing the extent and scale of losses to targeted beneficiaries as a result of diversion of coupons and subsidised inputs.
- Cost control: after the 2009/10 achievement of programme costs coming in under the budgeted amount, 2010/11 costs have again exceeded the budget – although the budgeting and control reasons for this are not clear.

Contents

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1. Introduction

This paper, part of a set describing different aspects of the 2010/11 agricultural input subsidy, reviews the processes of subsidy implementation, first describing the procedures and achievements in procuring and selling subsidised inputs, and then comparing this with information from different stakeholders to investigate access to and use of subsidised inputs by different beneficiaries.

Implementation of the subsidy programme involves a large number of complex and very significant logistical and organisational tasks with critical seasonal deadlines. In 2010/11 this involved selection of over 1.6 million beneficiaries from 4.3 million registered farm households, printing and distribution of over 6 million coupons, and purchase and distribution of 3.2 million bags of fertiliser and of nearly 3.4 million bags of seed –to tight deadlines, to nearly 30% of Malawi's farmers (many of whom are illiterate or semi-literate) widely dispersed across the whole country, some in remote and poorly accessible areas, with the constant temptation and threat of fraud or theft of highly valuable commodities worth nearly MK22 billion (nearly US$143 million) in total.

Information on implementation achievements is obtained from the following major sources:

- implementation reports (predominantly the Logistics Units weekly reports and its annual report),
- sixteen focus group discussions, sixty four life histories and twenty five key informant interviews conducted by the evaluation team with different stakeholders (Ministry of Agriculture and local government staff, retailers, and different categories of rural people) in 8 districts in major maize growing livelihood zones across the three regions,
- a household survey conducted by the evaluation team with a sample of 760 households across 8 districts in the three regions and representing eight major maize growing livelihood zones covering 77% of all rural households, with a 'community survey' with key informant groups in sampled villages, and
- reports by other organisations (such as FUM) on different aspects of subsidy programme implementation.

We consider and compare information from these sources on the major tasks and stages of programme implementation in terms of input (seed and fertiliser) procurement, beneficiary identification and coupon distribution, and coupon redemption. It has not been possible to obtain information on disbursement or costs of subsidised grain storage chemicals, and these are not considered in this report. We do not reproduce the detailed information and recommendations provided in the Logistics Unit Report beyond summarising and drawing attention to critical issues, and relating them to information from other sources.

2. Fertiliser procurement

As in the previous two years, fertiliser procurement was entirely the responsibility of government as there were no retail sales of subsidised fertiliser procured by private companies. Planning and tendering for fertiliser importation and procurement for fertilisers was conducted earlier than in previous years, with bidding documents issued in late March 2010 for public opening in mid-May.

The tender awards were announced in late July 2011 (a little earlier than in previous years) for purchase of 160,000MT (half of this 23:21:0 NPK and half Urea). Prices by supplier are shown in figure 1. This shows quite large variations in prices. For NPK there was a price spread of around $200/MT fairly evenly distributed across all suppliers, while for urea there was a well distributed price spread of about $100/MT across all suppliers except one, which was $135/MT above the next highest award.

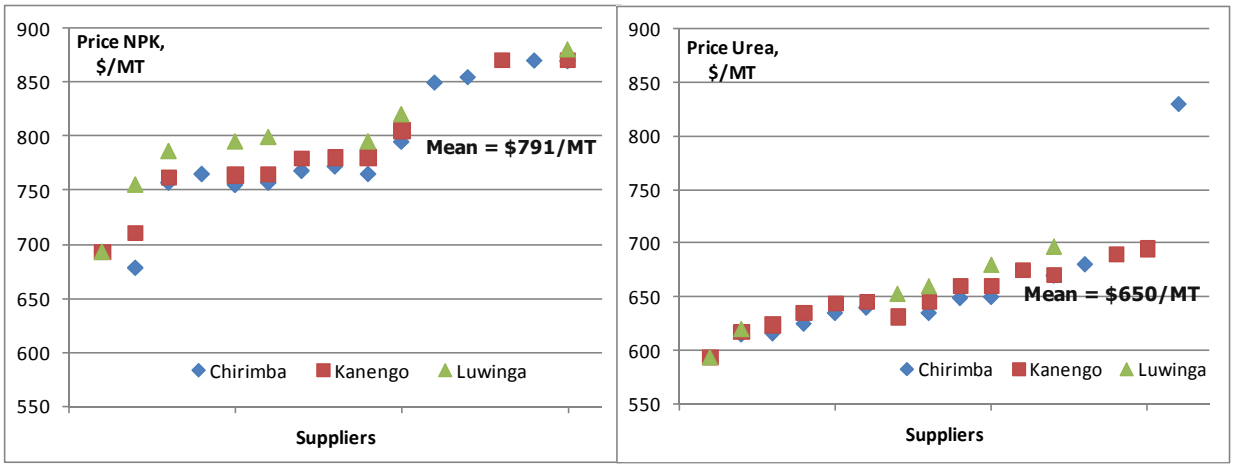


Figure 1 Mean Fertiliser prices by supplier

Source: Logistics Unit, 2011

The breakdown of awards by region and fertiliser type is given in table 1. This table shows that 95% of procurement was supplied by private importers and only 5% by SFFRFM. This represents a considerable increase in private sector imports over previous years. In addition, 512 MT of NPK and urea were carried forward from the previous year, together with 1,198MT D Compound and CAN.

Table 1 Fertiliser procurement and availability by region and type (MT)

	Fertiliser	NPK	UREA	D Comp.	CAN	Total	
Southern Region	New procurement	36,900.0	36,900.0	0.0	0.0	73,800.0	
	Carried forward	18.5	0.2	0.0	0.0	18.7	
	Sub total	36,918.5	36,900.2	0.0	0.0	73,818.7	
Central Region	New procurement	32,175.0	32,175.0	0.0	0.0	64,350.0	
	Carried forward	24.0	0.0	1,046.9	760.7	1,831.6	
	Sub total	32,199.0	32,175.0	1,046.9	760.7	66,181.6	
Northern Region	New procurement	10,925.0	10,925.0	0.0	0.0	21,850.0	
	Carried forward	14.5	455.3	19.8	11.2	500.7	
	Sub total	10,939.5	11,380.3	19.8	11.2	22,350.7	
National	New procurement	80,000.0	80,000.0	0.0	0.0	160,000.0	
	Carried forward	57.0	455.5	1,066.7	771.9	2,351.0	
	Sub total	80,057.0	80,455.5	1,066.7	771.9	162,351.0	
	New procurement SFFRFM supply	4,000	4,000	0	0	8,000	5%
	Private sector supply	76,000	76,000	0	0	152,000	95%

Source: Logistics Unit, 2011

Prompt delivery of some stocks led to storage problems when SFFRFM depots did not have space to accommodate them, but stocks ready for delivery were held by suppliers against a 90% payment until space became available. All deliveries should, contractually, have been made by 18th October, but by that date 68% of the tender award had been delivered, with deliveries held up by congestion at the port and on the road from Beira. Deliveries had risen to 79% by the beginning of November, and 91% by the end of November. Deliveries were completed at the beginning January. Throughout this time deliveries to the Central region lagged slightly behind those to the Southern and Northern regions (although in early December Southern and Central region deliveries of NPK both lagged those in the North, as a percentage of awards) , and NPK deliveries lagged Urea deliveries (Urea deliveries were completed by 14th December).

Figures 2 and 3 show cumulative deliveries, uplifts and sales of fertiliser over time for each year of the programme, as percentages of total parastatal sales (also see annex table A1).

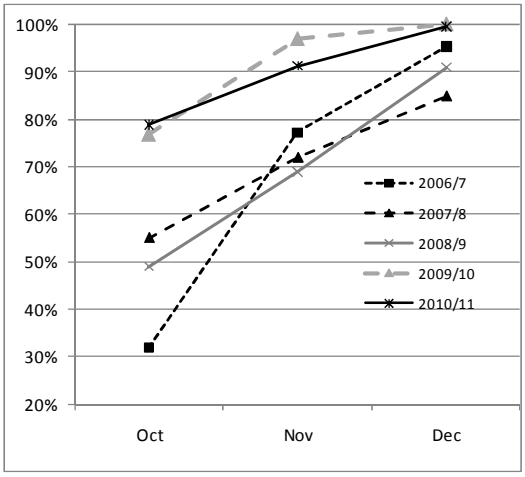


Figure 2 Cumulative depot deliveries
(% parastatal sales by end of month)

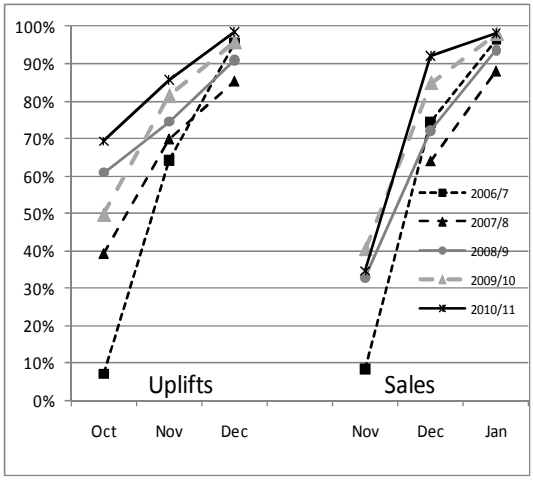


Figure 3 Uplifts and sales by month
(% parastatal sales by end of month)

Source: Logistics Unit, 2009 and Logistic Unit weekly reports

It is clear that since the 2005/6 programme (for which only limited data are available) there has been a general improvement in the timeliness of fertiliser purchases and depot deliveries. Early depot deliveries in 2007/8, 2008/9 and 2009/10 all benefited from significant stock brought forward from the previous season, so the early deliveries in 2010/11 are particularly noteworthy. However, despite the early availability of fertilisers, sales (and to a lesser extent uplifts) show little improvement with only limited improvement by the end of November, although this is critical for early planting and fertiliser application and to reduce travelling difficulties and demands on farmers' valuable time once the rains have come. The primary reason for late sales in 2010/11 appears to have been late completion of the processes of beneficiary selection, registration, and issue of coupons. Late opening of markets has also been a contributory factor in previous years: it is not clear how far this was an issue in 2010. However, slow sales delay uplifts from the depots to the markets, and this can be particularly problematic when it compounds transport problems from fuel shortages, poor roads and late award of transport tenders. Figure 4 shows how the timing for completion of various critical processes has varied over the last 5 seasons (with earlier, ie lower in the graph, being better). While information is not currently available on the timing of voucher printing and the finalisation of seed supply contracts in 2010/11, it is clear that fertiliser procurement tenders were awarded a little earlier in the 2010/11 programme, as compared with previous years, but completion of distribution of voucher lists to districts did not, critically, show any such improvement.

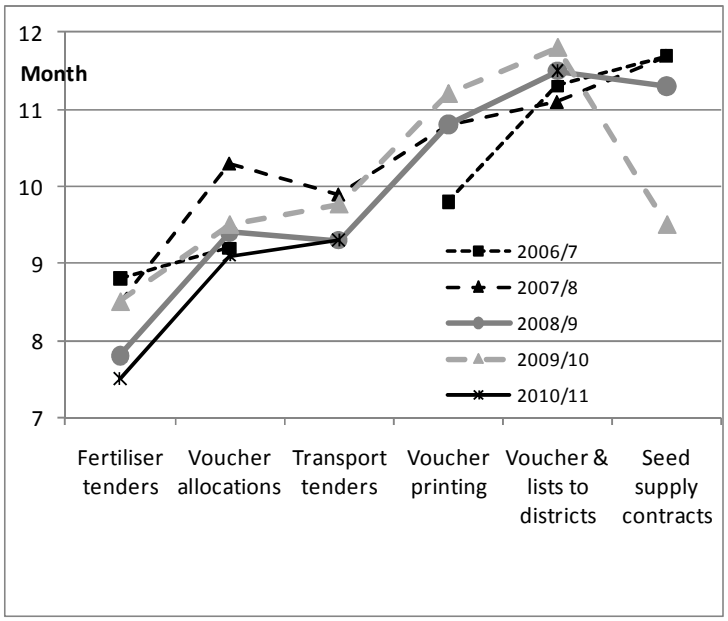


Figure 4 Timing of completion of contracts & voucher processes

Source: Logistics Unit, 2009 and Logistic Unit weekly reports

Logistics Unit (2011) notes the following:

- Delays in award of tenders increase risks of price rises for those tendering, and since such risks will be built into tender prices, they tend to inflate prices. The transfer of exchange rate risk through a fixed exchange rate has the same effect. Very large price differences between some different suppliers' awards are also noted.
- Although deliveries were more timely than in previous years, there were still some late deliveries. To reduce these problems tender contracts should include penalty clauses for late delivery of contracted amounts.
- Delays in uplifting and sales could be partly due to slow contracting of transporters for uplifting. Requests for bids were not issued until mid August and contracts were not awarded until early September. In the event this did not delay sales: late beneficiary selection and issue of coupons were more of a problem in many areas.
- Transit losses of fertilisers were low and with one exception recovered from transporters.
- Transport costs of MK 21,856,379 were incurred due to imbalances of 1,693 MT between deliveries to depots / markets and their sales requirements.
- There continue to be significant delays in payment of invoices from seed and fertiliser suppliers and these raise suppliers' costs and hence pricing to the programme.

Table 2 shows that there were significant delays in payment in November and December, measured in terms of both absolute and percentage amounts owing, much higher than in 2009/10. Payments improved in January, but there were still significant delays, and these continued for seed suppliers, with only 55% of invoices paid for maize seed by the end of May. Fertiliser suppliers are also reported to have experienced some difficulties as a result of delays in issuing documentation on withholding tax payments.

Table 2 Outstanding invoice payments by season

	2006/7	2007/8	2008/9	2009/10	2010/11
Outstanding invoices (MKmillion)					
End Nov	1,216	1,595	3,500	814	2,440
End Dec	4,303	1,192	3,690	955	3,164
End Jan	1,406	2,620	7,707	585	1,510
Outstanding payments (% cumulative total due)					
End Nov	28%	22%	16%	13%	15%
End Dec	46%	13%	13%	11%	17%
End Jan	14%	21%	22%	6%	7%

Source: Logistic Unit weekly reports

3. Seed procurement

Seed companies and government agreed that farmers should be able to buy seed with a seed coupon with a maximum MK100 cash top up from farmers, and that these coupons would be redeemed by government for a price of MK 1650/coupon. Seed companies were responsible for stocking retail outlets (agro-dealers, input supply shops, and ADMARC and SFFRFM markets) with 5kg packets of hybrid seed, 7.5kg packets of OPV seed and 2 kg packets of legume seed (beans, cowpeas, pigeon peas, groundnuts or soya) for redemption by farmers, with returns by retailers to seed companies who were responsible for claiming reimbursement from the Government (through the Logistics Unit).

4. Coupon printing, allocation and distribution

Coupon allocation involved updating the farm households register, local (village) processes of selection of beneficiaries, allocation of coupons by district and within district by EPA, printing of coupons, distribution to districts, and issue of coupons to beneficiaries. These activities are critical as regards coordination of numbers of beneficiaries identified, coupon printing and issue, and allocation and transport of fertiliser supplies to markets, with total supplies matching fertiliser procurement.

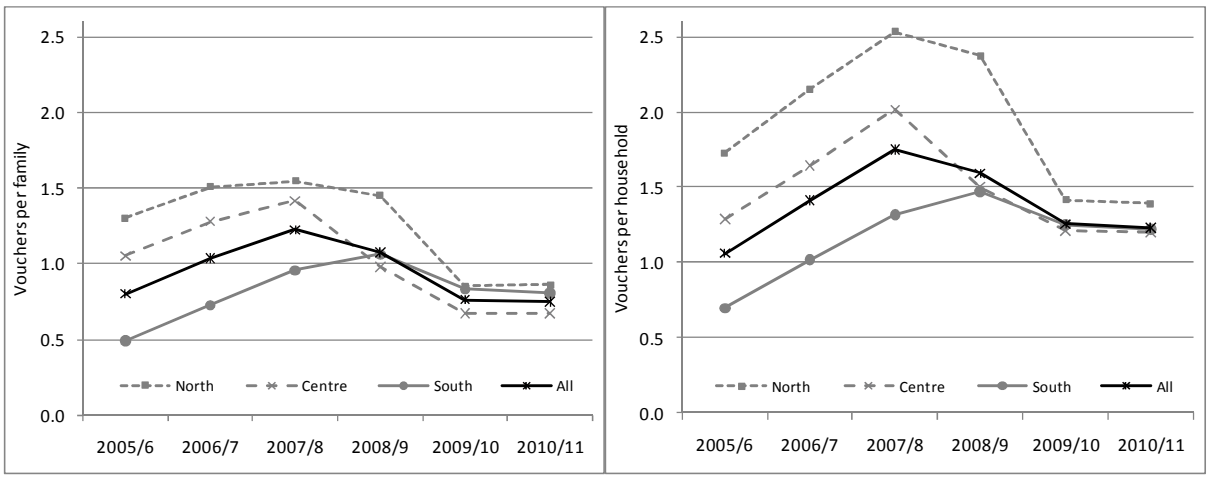
Registers of farm households in all districts were updated in the field from May to September and then cleaned by the Logistics Unit and sent back to districts for checking. This information formed the basis of an initial allocation of coupons in early September by district with four coupons per beneficiary to allow each beneficiary to receive a set of subsidised inputs consisting of one hybrid or OPV maize seed pack (5 or 7.5 kg), one 50 kg bag of NPK, one 50 kg bag of urea, and one 2 kg legume seed pack. District allocations were subdivided by EPA and village using the farm family register in each district, and the EPA and village allocations were distributed to DADOs together with blank registration forms for entry of beneficiary names. This allowed beneficiary identification to start in early September, with beneficiary names, sex and voter registration number, but it was not completed by all districts until the last week of November (although some districts had completed it by the end of September). Beneficiary lists were then printed by the Logistics Unit with beneficiary details by village and sent to MoAFS, and summaries of fertiliser requirements by market compiled. Table 3 shows beneficiary registrations by region (annex table A2 contains the same information by district).

Table 3 Final Beneficiary Registrations by Region (Households)[1]

	Target	% by Region	% Male headed	% Female headed	Unallocated
North	217,847	14%	35%	64%	1%
Centre	644,005	40%	34%	65%	1%
South	738,148	46%	52%	45%	3%
Total	1,600,000	100%	42%	56%	2%

Source: Logistics Unit Final Report, 2011

As in previous years there is some unevenness in allocations between districts and regions when compared with estimated population. Figure 5 compares changes in fertiliser voucher redemption by region per household over the life of the programme, using MoAFS farm family and NSO rural household estimates (note that in 2010/11 each registered beneficiary was supposed to receive two fertiliser vouchers). The data from which these graphs are drawn are given in Annex table A3.



Source: Calculations from Logistics Unit (2011), NSO(2008), MVAC livelihood zone data, see Annex table A3.

Figure 5 Estimates of fertiliser voucher redemption per household by region by year using MoAFS farm family estimates (left) and NSO rural household estimates (right)

The following observations are of interest from Figure 5:

- There have been significant differences in fertiliser supply over the life of the programme, with it rising from 2005/6 to 2007/8, and then falling back to 2009/10, with the same supply in 2010/11.
- There are marked differences between supply per farm family registered by MoAFS and supply per rural household estimated from NSO census figures, with supply per MoAFS farm family much lower than supply per NSO rural household. This is because MoAFS national farm family estimates are just over 60% higher than NSO rural household estimates. This difference is lower in the southern region (44%) and highest in the Central region (82%). MoAFS figures show more farm families in the Centre than the South.
- Both MoAFS and NSO estimates show differences in availability per household between regions, with these regional differences declining over time. Availability has been highest in the north in all years, but increasing regional equity has meant that supply to the north declined sharply from 2007/8 to 2009/10. Supply per MoAFS farm family in the central region also shows a very sharp decline, below supply in the southern region, but this is not

[1] It should be noted that it may not be clear if the beneficiary listing distinguishes between male and female heads or male and female recipients.

shown for supply per NSO rural household (with supply per household in 2010/11 almost identical for the two regions), and is due to very rapid increases in MoAFS central region farm family registrations over the period (9.1% in the central region compared with 2.2% in the southern region, although both these are higher than the 1% average growth for NSO figures – see table A4).

Coupon distribution and access depended on the implementation of the formal allocation processes described above. Coupons were despatched to districts and bundled by EPA and village. Tight security measures were followed to the extent that no details of the coupons were released prior to the opening of the programme on 7th October, with no briefing of stakeholders on the security features of the coupons. There is no evidence that fertiliser coupon distribution exceeded the formal allocations detailed above (a situation that arose with the issuing of supplementary coupons from 2006/7 to 2008/9), but there were concerns among some stakeholders about the quality of coupon printing and the effectiveness of the coupons' security features.

5. Coupon redemption and input sales

Fertiliser coupons had to be redeemed by beneficiaries at ADMARC or SFFRFM markets with the payment of MK500. Seed coupons could be redeemed (without payment or for up to MK100 for hybrid and some OPV packs) at agro-dealers and other input sellers who had made arrangements with seed suppliers for seed coupon redemption, as well as at ADMARC or SFFRFM markets. Sales occurred when suppliers had stocks and beneficiaries had coupons, starting from mid October in Phalombe and continuing into early February in the South and mid February in the north. Reported fertiliser and seed sales are detailed in table 4.

Table 4 Subsidised fertiliser and seed sales

	Fertilisers (MT)					Seed ('000 packs)	
Region	NPK	Urea	CAN	D comp.	Total	Maize	Legume
North	10,856	10,918	-	21	21,795	327.2	195.2
Centre	32,209	32,210	353	66	64,838	913.2	613.7
South	36,880	36,880	140	-	73,900	747.6	554.4
Total	79,945	80,008	493	87	160,533	1988.1	1363.4

Source: Calculations from Logistics Unit (2011)

With the seed coupons, farmers purchased 8,521 MT of hybrid seed and 2,129 MT of OPV seed, together with 2,727 MT of legume seed (comprised of 317 MT of beans seed, 2 MT of cow peas seed, 2030 MT of groundnuts seed, 375 MT of soya seed and 4 MT of pigeon pea seed). The large volumes of maize seed sales were substantially above budget, due to maize seed coupons redemptions exceeding maize seed issues by 400,000 or 25%, as a result of acceptance of counterfeit coupons. Figure 6 shows how subsidised fertiliser and seed sales have changed over the life of the programme.

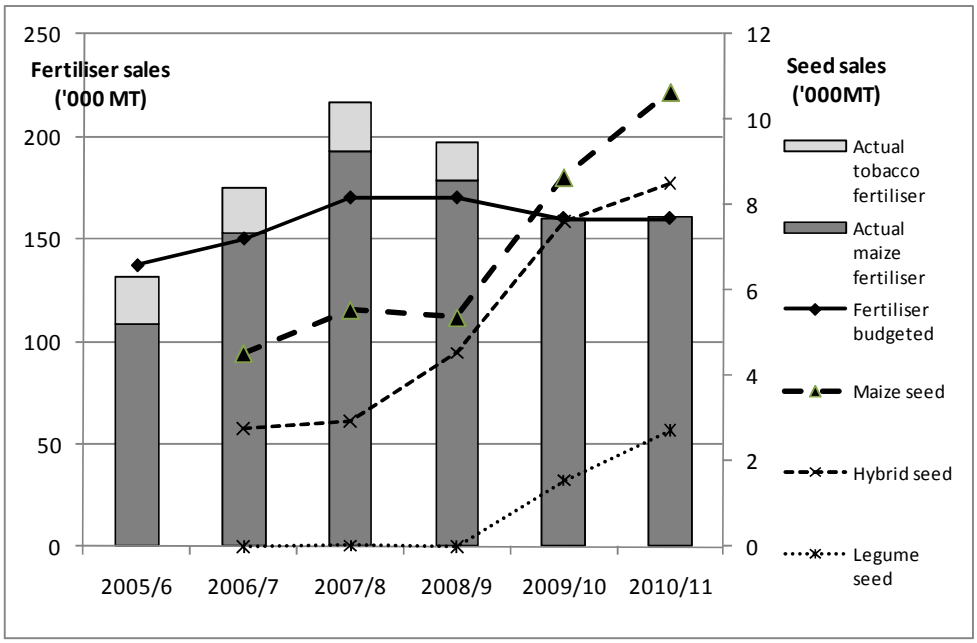


Figure 6 Subsidised fertiliser and seed sales by year

Source: Calculations from Logistics Unit (2011) and earlier reports

As figure 6 shows, there were large increases in maize and legume seed sales from 2009/10 to 2010/11 (with 2009/10 showing a marked increase from relatively static figures in previous years. This is primarily due to increased maize seed pack sizes and improved availability of legume seeds. However, local shortages of legume seeds still constrained choice and purchases in 2010/11. Within the increased maize seed sales in 2010/11 there was some recovery of market share by OPV as compared to hybrid seed (farmer preferences for these varieties are discussed later in section 11).

Logistics Unit (2011) reports that in some districts coupon redemptions exceeded allocations (this occurred with nearly 17,000 fertiliser vouchers in 6 districts, and with nearly 395,000 or 25% of maize seed vouchers in 22 districts). Some submitted coupons had duplicate serial numbers, some had serial numbers greater than the highest district registration number, and some had been submitted twice for redemption at input markets, despite being stamped and having the corner removed. There was, however, little that could be done about many of these coupons given the difficulties in identifying security features on the coupons (however seed coupons with out of range serial numbers were returned to seed companies without further processing or payment, and such coupons are not included in the sales and redemption figures above).

We consider in the following sections different stakeholders' perceptions of the implementation process, and estimates of coupon distribution and use for different categories of rural people.

6. Total coupon distribution

Total coupon disbursement and inputs sales as reported by the Logistics Unit were described above. We now compare these figures with estimates from the household survey. Table 5 gives estimates of total coupon receipts from the household survey.

Table 5 Household survey estimates of total coupon receipts

	Fertilisers, 20010/11			Seeds, 2010/11	
	23:20	Urea	Total fert.	Maize Seed	Legume seed
1.Coupons received per hhold by Livelihood zone & region					
Mzimba self sufficient	0.67	0.63	1.30	0.68	0.47
West. Rumphi Mzimba	0.73	0.77	1.51	0.92	0.64
Northern region	**0.69**	**0.69**	**1.38**	**0.78**	**0.54**
Kasungu Lilongwe	0.41	0.46	0.87	0.53	0.26
Rift Valley Esc	0.62	0.56	1.17	0.76	0.53
Central region	**0.45**	**0.47**	**0.92**	**0.57**	**0.31**
Middle Shire	0.79	0.78	1.57	0.82	0.60
Shire Highlands	0.64	0.64	1.29	0.75	0.39
Phalombe Plain	0.53	0.57	1.10	0.75	0.39
Thyolo Mulanje	0.68	0.68	1.36	0.76	0.70
Southern Region	**0.64**	**0.65**	**1.29**	**0.76**	**0.48**
National	**0.55**	**0.57**	**1.13**	**0.68**	**0.41**
*2. Estimate of total coupons received, based on NSO/MVAC population est. ('000)**					
Northern region	229	227	456	257	177
Central region	462	492	953	593	318
Southern Region	635	643	1,278	758	480
National	**1,349**	**1,384**	**2,733**	**1,613**	**968**
*3. Estimate of total coupons received, based on MoA population est. ('000)**					
Northern region	371	368	739	416	286
Central region	823	877	1,700	1,058	567
Southern Region	960	971	1,931	1,145	726
National	**2,179**	**2,240**	**4,420**	**2,649**	**1,600**
4. MoA Voucher allocations ('000)					
Northern region	218	218	436	218	218
Central region	644	644	1,288	644	644
Southern Region	738	738	1,476	738	738
National	**1,600**	**1,600**	**3,200**	**1,600**	**1,600**
*5. MoA Voucher redemptions ('000)***					
Northern region	215	218	433	327	195
Central region	648	643	1,291	913	614
Southern Region	728	731	1,458	748	554
National	**1,591**	**1,592**	**3,183**	**1,988**	**1,363**

** Regional totals adjusted by differences in % farm families registered as beneficiaries in sampled and unsampled districts*

*** Voucher redemptions exclude CAN and D compound*

Sources: 2011 survey, MoAFS Farm Household Register, 2008 Preliminary census report (Tables 4 & 5), MVAC data.

Table 5 is presented in five panels. The top panel shows the coupons received per rural household estimated from the household survey. These estimates are then multiplied by the estimated number

of farm families to calculate total coupons received by region and nationally[2]. A difficulty arises, however, as a result of substantial differences between rural population estimates used by the National Statistical Office and by the Ministry of Agriculture and Food Security, as discussed earlier.

NSO estimates of the total number of rural households are based on the 2008 census whereas Ministry of Agriculture and Food Security figures are derived from farm household registrations by agricultural field staff as discussed in the previous section and shown in table A4. There are very substantial differences between the two figures. NSO census figures adjusted using MVAC livelihood zone data give estimates of just under 2.61 million rural families outside peri-urban and urban and protected areas in 2010, while the Ministry of Agriculture and Food Security estimate that there are 4.27 million farm families (over 60% more than the census estimate). The second and third panels of table 5 therefore show two sets of regional and national coupon receipts, one calculated with NSO population estimates and the other calculated with Ministry of Agriculture and Food Security estimates. These are substantially different.

If the NSO population estimate is correct then this suggests that a significant number of 2010/11 fertilizer coupons did not reach the rural people for whom they were intended – though at 15% nationally the estimated discrepancy is lower than in 2008/9 (when it was estimated as 22%[3]). The Ministry of Agriculture and Food Security farm family figure leads to the estimated number of coupons received being substantially larger than those issued. This discrepancy, together with the reported regional growth rates reported earlier and shown in table A4 and anecdotal reports of households 'splitting' to register for coupons, suggests that the MoAFS figures need to be interpreted carefully. The use in the household survey of NSO households for sampling and the NSO household definition also means that NSO figures are more likely to be compatible with survey estimates. However, NSO figures may also under-estimate household numbers if households were missed during census enumeration. Maize seed coupons estimates based on the NSO population almost exactly match allocations, whereas legume seed coupons are nearly 40% lower than allocations.

In the FGD's, changes in coupon numbers from 2008/9 were reported differently in different areas - slightly higher in 2010/11 than in 2008/9 in some areas, slightly lower in other areas, and similar in others. There was similar variation in reports from the community survey. As in the 2008/9 survey, household responses for the previous year (2009/10 in this case) do not seem reliable.

7. Coupon targeting

Tables 6 and 7 provide some information about the distribution of coupons within the rural population. Table 6 shows the proportion of households receiving different numbers of fertiliser coupons, and the mean number of coupons received by those households receiving coupons, for different categorisations of households. A number of points of interest arise from this.

- For the sampled livelihood zones, 75% of households are estimated to have received one or more fertiliser coupons, and across all categories this does not drop below 60% (ignoring the very small and hence unreliable sample of child headed households). As with the 2006/7 survey, community leaders consistently report a lower percentage of households as recipients, even after allowing for the potential effects of sharing on differences in perceptions of household recipients at village and household level.

[2] The survey sample focussed on larger livelihood zones where maize is more important, and MoAFS data show a somewhat larger proportion of farm families receiving coupons in the districts from which the sample was taken (as compared, for example, with Nsanje and Chikwawa) and the estimates have been adjusted to compensate for this.

[3] The smaller sample in the 2010/11 survey precludes the estimation of confidence intervals for national estimates

- Many households (41%) are receiving only one coupon (or are sharing two coupons, with a half of the inputs each). As with survey results from previous years, this is less common in the North and more common in the South. There is also greater overall access in the south as compared with the centre, a pattern in line with the MoAFS farm family estimates rather than the NSO rural household estimates.
- Although significant proportions of households in all the categories identified in table 6 receive coupons, receipt of coupons does vary across categories and seems to be higher for households in the northern region and for male headed households, to increase with increasing food security, and to increase with increasing subjective welfare status (as regards coupons per receiving household). Conversely, it is lower for female headed households and for less food secure and for households with lower subjective welfare.
- As compared with 2008/9 survey findings for the same livelihood zones, overall access appears similar but there is some shift of coupons from the North to the South (in line with MoAFS allocations), while biased access by male headed households appear greater in 2010/11 (as in 2006/7 but not 2008/9) and there is also more bias away from food insecure households

Table 6. Fertiliser Coupon receipts per household by region, gender & age of head, and food security & subjective welfare status

	Sample size	2010/11 coupons							2008/9		2006/7	
		Zero	>0 & <1	1	1.5	2	>2	Mean/ recipient	Zero	Mean/ recipient	Zero	Mean/ recipient
North	100	24%	1%	23%	1%	47%	5%	1.81	28%	2.03	38%	1.9
Centre	240	31%	6%	38%	0%	24%	1%	1.34	35%	1.42	45%	1.7
South	420	11%	3%	47%	2%	35%	2%	1.46	33%	1.49	49%	1.7
National	760	21%	4%	41%	1%	31%	2%	1.44	33%	1.52	46%	1.7
Male headed	567	20%	4%	40%	1%	32%	2%	1.45	34%	1.55	43%	1.8
Female headed	193	25%	3%	43%	1%	27%	2%	1.41	32%	1.45	54%	1.6
Working age head	633	21%	4%	42%	1%	30%	2%	1.43	35%	1.53	N.A.	
Elderly head	123	21%	4%	32%	2%	40%	1%	1.53	28%	1.49		
Maize for 0-3 months	23	40%	12%	35%	2%	11%	0%	1.01	43%	1.32		
Maize for 4-7 months	151	21%	5%	40%	2%	30%	1%	1.41	30%	1.4		
Maize for 8-10 months	215	25%	6%	43%	0%	24%	1%	1.34	27%	1.6		
Maize for >10 months	98	17%	4%	53%	2%	22%	2%	1.30	36%	1.77		
Poorest (Ovutikitsitsa)	163	29%	5%	44%	2%	19%	2%	1.29	40%	1.31		
Ovutika	317	19%	4%	43%	0%	31%	2%	1.42	30%	1.50		
Ovutikilako	173	21%	4%	43%	1%	30%	1%	1.42	30%	1.56		
>=wapakatikati	105	17%	4%	26%	1%	50%	2%	1.69	36%	1.80		

Note: Comparisons with survey results from the 2008/9 and 2006/7 seasons take account of differences in sampling in that the 2008/9 and 2006/7 figures are only for those livelihood zones sampled in 2010/11.

Some of these differences are explored further in table 7 which shows mean gender of household head, land ownership, asset ownership, food security and subjective welfare by number of coupons

received per household (with those categories with larger sample sizes in bold). There is a general trend for means of variables associated with wealth to rise among households receiving more coupons – a situation also observed in the 2006/7 and 2008/9 surveys (the only exception to this is with months for which the maize harvest lasts). An additional aspect of this also observed in the 2008/9 survey is that the largest differences are found between households with 1 coupon and those with more than 1 coupon – there are higher means among households with zero coupons. One may hypothesise from this that the redistribution of coupons which leads to households getting one coupon is from poorer households and/or to poorer households – and in the second aspect may be more effective in targeting poorer household than the formal distribution process. No consistent differences in allocation were found between livelihood zones or between areas with patrilineal and matrilineal systems (see table A5).

Table 7 Mean Attributes of Households by number of Fertilizer subsidy coupons received per household, 2008/9

	Fertiliser Coupon numbers per hh						
	Zero	>0 & <1	1	1.5	2	More than 2	All
Sample size	140	25	314	8	252	21	760
% hhold female headed	**29**	19	**27**	25	**22**	23	26
Owned Area in ha	**1.41**	1.80	**1.04**	1.04	**1.69**	2.17	1.37
Value durable assets (MK)	**13,491**	5,472	**9,205**	1,371	**63,607**	21,301	26,944
Value Livestock assets (MK)	**28,267**	12,191	**15,962**	8,266	**32,652**	37,450	23,913
Total Value livestock & durable assets (MK)	**41,758**	17,663	**25,167**	9,637	**96,259**	58,751	50,857
Subjective score of hh food consumption over past 12 months	**1.51**	2.02	**1.45**	1.21	**1.74**	2.02	1.55
Subjective score on welfare	**2.17**	2.40	**2.13**	2.16	**2.63**	2.40	2.30
Month after harvest that maize ran out	**8.22**	7.69	**8.39**	8.17	**8.07**	8.94	8.24

Overall these observations suggest limited effectiveness of targeting poorer and more vulnerable households - they are not excluded but they are relatively under represented, while less poor households are not excluded and appear to be somewhat over represented among beneficiaries with more coupons[4]. This raises important questions about targeting and coupon allocation and distribution processes. Since 2006/7, targeting criteria have placed more explicit emphasis on the provision of coupons to more vulnerable households – emphasising child or female headed households, people living with HIV/AIDS, vulnerable people and their guardians or carers, if they are resource poor Malawians and owning land[5]. There has also been a requirement that beneficiaries should have a voter registration card for identification. There are some continuing difficulties in the implementation of this. We discuss these difficulties in terms of processes and outcomes.

[4] FUM (2011) report that about 60% of households in their sample of registered beneficiaries considered themselves to have been targeted because of their poverty. However they also find that that 46% of respondents considered their living conditions to be poor or very poor, and suggest that this is in line with the WMS estimate of 42% of rural households being poor. If this is the case then it does not appear to suggest that beneficiary selection is differentially targeting poorer households.

[5] Tables 6 and 7 present information from all households, including those with no or very little land. However, the general patterns in tables 6 and 7 are not changed if the analysis is changed by removing these households from the sample.

In the focus group discussions, respondents commonly reported that in open meetings there was targeting of poor and vulnerable people. However, it was also commonly (but by no means universally) reported that issuing of coupons did not follow the agreed beneficiary list, with dropping of names (this was associated with claims - in 50% of the FGDs - that agricultural staff were taking coupons, generally with the connivance of other stakeholders, to sell to vendors and richer households). Similar observations were reported from FGDs by FUM (2011). Formal sharing of coupons by a significant number of (sometimes all) beneficiaries was explicitly reported in 75% of FGDs. The requirement that beneficiaries show voter identification was praised in some FGDs (for reducing fraud by outsiders) and criticised in others (for excluding child headed households and others who did not vote). These criticisms are likely to become more common if voter identification cards are not regularly updated.

As with the 2008/9 survey, many FGDs mentioned difficulties in targeting because of the large number of deserving households. This came up explicitly in a few FGDs, but more commonly in comments that the number of coupons is not enough for deserving households, and in widespread acceptance of the common practice of sharing.

In recent years beneficiary registration has also distinguished between male and female beneficiaries. As noted earlier (see table 3), females accounted for 56% of registered beneficiaries nationally (64%, 65% and 45% respectively for the North, Centre and South). Table 8 shows the gender of recipients as reported in the household survey.

Table 8 Fertiliser planned and actual coupon receipts by household head & recipient gender by region

Region	Beneficiary list hh head , % beneficiaries		Actual hh head , % beneficiaries		Actual recipient , % coupons	
	Male	Female	Male	Female	Male	Female
North	35%	64%	86%	14%	*70%*	*30%*
Centre	34%	65%	81%	19%	*65%*	*35%*
South	52%	45%	72%	28%	*42%*	*58%*
TOTAL	42%	56%	77%	23%	53%	47%

Table 8 shows that receipts by females are lowest in the North and highest in the South (this is reverse of the pattern of registered beneficiaries as set out in the left hand column and earlier in table 3[6]). However, it also shows that there are substantial numbers of male headed households where women (not the male head) receive the coupons. Focus group discussions suggested that differences between patrilineal and patrilocal systems in some areas and matrilineal and matrilocal systems in others led to differences in allocations between male and female household members – and with the greater preponderance of matrilineal and matrilocal systems in the South this is supported by the data in table 8. FGDs also suggested that in some areas village headmen and/or committees allocated coupons to male or female headed household members according to their perception of the reliability of the individuals concerned – so that, for example, if a man was known

[6] It should be noted that it may not be clear if the beneficiary listing distinguishes between male and female heads or male and female recipients.

to spend time and money on beer then his wife was more likely to be allocated the coupon. FUM (2011) FGDs reported more general dominance of males in household allocation decisions.

8. Allocation and distribution processes

An important innovation in 2008/9 was the introduction of 'open meetings' during the registration and distribution process, with two objectives:

a) To ensure that FISP beneficiaries (and non-beneficiaries) are adequately informed about the operation of the FISP and have realistic expectations; and
b) To include households in the targeting process, removing targeting power from TAs and village headmen and giving it to the community itself.

On the whole, FGDs reported that open meetings continued to be used for beneficiary registration. However, there were widespread (but not universal) complaints that the household registration lists were not up to date (for instance including names of deceased people) and that when coupons were issued there were reduced numbers of beneficiaries so that some beneficiaries who were originally registered did not obtain coupons. There was widespread suspicion that agricultural staff were manipulating information to allow them to retain coupons for themselves (expressed in 12 out of 16 FGDs). However it should also be noted that in at least two FGDs (in Ntcheu) these suspicions were fuelled by the misapprehension that there should have been enough coupons for all households to receive a full set, and that agricultural staff were therefore stealing very large numbers of coupons. In Mzimba, however, one focus group were full of praise for the agricultural staff's management of the process. In some FGDs village headmen were reported to divert coupons to their associates and relatives. FUM (2011) report lower incidence of these problems reported against specific survey questions which asked for respondent views on coupon allocation difficulties.

Table 9. Frequency of coupon allocation and distribution methods by coupon type

Coupon type	Region	Open meeting for: allocation	Distribution	Subsequent redistribution
Fertilizer voucher	North	79%	100%	35%
	Central	67%	91%	59%
	South	93%	100%	88%
	Total	80%	96%	70%
Maize seed voucher	North	79%	100%	13%
	Central	68%	90%	49%
	South	93%	99%	87%
	Total	80%	95%	64%
Flexi seed voucher	North	79%	100%	8%
	Central	62%	86%	46%
	South	92%	98%	84%
	Total	77%	93%	61%

These observations in the FGDs coupon allocation and distribution systems are supported by survey respondents' observations summarised in table 9, which shows very high proportions of households reporting open meetings for coupon allocation and distribution in their villages, with more open meetings for distribution than for allocation, and greater use of open meetings in the South, and least in the Centre. (There is no survey information about the extent to which coupon distributions tallied with earlier allocations). Subsequent redistribution (by the community after external distribution according to the register) was reported in a substantial proportion of cases, most particularly in the southern region - and least in the North (this tallies with the regional pattern of

reported receipt of one coupon). Redistribution was uncommon for seed coupons in the North. The same question was asked in the community survey with similar responses as regards the widespread use of open meetings for coupon allocation and distribution (in 75% and 87% of cases overall) and substantial subsequent redistribution of fertiliser coupons (in 87% of cases), and with redistribution much less common in the North. Open meetings were again most commonly reported in the North and South.

Table 10. Importance of different stakeholders in coupon allocation and distribution methods

Stakeholders		Open meeting for:		Subsequent redistribution
		Allocation	distribution	
agric. extension staff	North	2.35	1.03	2.82
	Central	2.23	1.48	2.95
	South	1.56	1.14	2.49
	Total	1.87	1.28	2.68
vdc members	North	1.11	1.45	1.37
	Central	1.62	1.68	1.95
	South	1.26	1.26	1.48
	Total	1.39	1.45	1.65
headman/ta	North	1.11	1.55	1.00
	Central	1.13	1.29	1.11
	South	1.07	1.08	1.07
	Total	1.10	1.21	1.08
local political leaders	North	2.96	2.87	2.98
	Central	2.82	2.75	2.94
	South	2.19	2.10	2.47
	Total	2.49	2.44	2.67
Other	North	2.90	1.57	2.94
	Central	2.72	1.49	2.83
	South	2.46	1.06	2.63
	Total	2.57	1.26	2.70
Scores	*1 = present and important* *2= present but not important* *3 = not present*			

Table 10 shows that agricultural extension staff are perceived to be important in meetings for allocation (particularly in the South, and less in the Centre and North) and almost universally play an important role distribution of coupons. However, they are not perceived to be much involved in subsequent redistribution. The importance of VDC members varies but is greatest in coupon allocation, particularly in the South and North, and is least for coupon redistribution. Headmen/ TA's were present and played an important role in all activities, particularly in allocation and redistribution. Local politicians were not considered important in any of the three processes. 'Others' (police and other officials) are seen as relatively important in the distribution meetings but not in the allocation and redistribution of coupons. Respondents in the community survey reported a similar pattern.

Table 11 presents answers to questions where respondents were asked to score the extent to which particular types of household were more or less likely to gain coupons. With mean scores for most categories of people clustering around 2 (i.e. no difference in likelihood of getting coupons) the results show no clear perceptions of particular target or beneficiary groups (but there is a general understanding that civil servants and teachers are less likely to obtain coupons). No strong differences were observed between the perceptions of people in different areas, or between male and female headed households (although there is a slightly greater tendency for respondents in the

North and among female respondents to suggest that more disadvantaged people have a greater chance of getting coupons). The lack of evidence of clear targeting contrasts with clear perceptions of FISP target groups reported in the community survey and FGDs, and in FUM (2011) Community survey respondents were also asked which particular groups of people were intended beneficiaries. Poorer and female headed households, those with orphans and the elderly were generally considered as intended beneficiaries. FGDs commonly reported (6 out of 16 FGDs) that the poor were targeted (or supposed to be targeted). These findings are consistent with MoAFS targeting criteria and the pattern of beneficiary responses reported by FUM (2011), although in the FUM (2011) report most households reported that they were selected because they were very poor.

Table 11 Likelihood of getting coupons

	Region			Household head		Total
	North	Central	South	Male	Female	
Poor people	1.77	1.79	1.91	1.89	1.83	1.85
Female headed households	1.74	1.96	2.05	2.05	1.97	1.99
More productive farmers	1.99	2.13	2.02	2.01	2.09	2.07
Households with orphans	1.76	1.91	1.90	1.97	1.87	1.89
Better off households	2.02	2.26	2.00	2.03	2.15	2.12
Civil servants and teachers	2.50	2.41	2.23	2.25	2.35	2.32
VDC members	1.97	2.10	1.75	1.86	1.94	1.92
Elderly / sick people*	N.A	1.60	1.57	1.60	1.58	1.59

Scores: 1 = more likely; 2= no difference; 3 = less likely

* This was the major category volunteered by 25% of respondents in 'other categories' and was generally mentioned by respondents who considered them to be more likely to get coupons.

9. Perceptions on total coupons and systems over time

It was reported in the 2008/9 survey results that the FGDs suggested that the open meetings in 2008/9 were generally considered to have been an improvement over previous methods, and the 2010/11 FGDs were also generally supportive of open meetings. Table 12 shows respondents' perceptions of changes in different aspects of programme implementation.

Table 12 . Scoring on different programme elements by year & alternative targeting systems

	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11
Number of coupons	2.96	3.02	3.07	3.16	3.20	3.36
Timing of distribution	2.73	2.73	2.56	2.01	2.20	1.93
Methods of coupon distribution	2.89	2.94	2.97	2.81	2.69	2.74
Criteria for coupon allocation		2.95	2.92	2.83	2.79	2.83
Coupon allocation targeting the poor (100kg fertiliser)				2.42		2.43
Coupon allocation targeting the productive (100kg fertiliser)				3.88		4.11
Coupons for all households with half the amount (50kg fertiliser)				2.69		2.55

Scores: 1 = very good; 2= good; 3 = not good not bad; 4 = bad; 5 = very bad

Rising scores for the number of coupons indicate a perception that the number of coupons is falling. This perception appears to be strongest in the central region and, unsurprisingly, among those who did not receive coupons. Falling (and low) scores for the timing of coupon distribution indicate a perception that this is has improved over the life of the programme, this is particularly the case in the south. Views on changes in methods of coupon distribution and criteria for allocation are mixed.

It may be difficult to separate concerns about methods from overall numbers of coupons. The scoring for coupon distribution methods (averaging a little better than 'not good not bad') and timing (averaging a little better than good) are broadly consistent with FUM (2011) reports of 69% of registered beneficiaries being generally happy with coupon distribution methods and of their being happy with coupon timing. However they appeared less happy with coupon numbers, with (24% reporting too few coupons as a major problem.

As regards alternative targeting of poor or productive households, or a smaller but universal package, views in 2008/9 and 2010/11 are very consistent across years (as are all the views reported in table 12) targeting the poor receives the most approval, closely followed by smaller package provided to all households. Both these are scored more highly than those experienced in the past, while focussing on productive households is considerably less popular. Female headed households express a stronger preference for these methods, and the preference for a universal 50kg subsidy is very strong among those who did not receive coupons. Given continuing difficulties with targeting, it is not clear how targeting of the poor could be achieved.

As in the 2008/9 study, in the focus group discussions there were differing views on whether coverage ought to be increased by decreasing coupon size to cover 25 kg instead of 50 kg bags. Seven groups agreed that this would be a good way forward, three groups did not support it, while in four groups there were mixed views. In a number of groups there was some support for reintroduction of 'across the board' price subsidies, with a reduced subsidy per bag of fertiliser, but there were also arguments that poorer people already found it hard to afford the current 500MK per bag farmer contribution.

10. Access to coupons and timing

Due to its sensitivity, information on purchases of coupons is unlikely to be reliable. Around 2% of fertiliser coupons were reported as being obtained with some payment (lower than reported in previous surveys). There was no indication of any systemic differences in this between male and female beneficiaries. Reported sources of such coupons included TAs and headmen, agricultural staff, and traders in approximately equal proportions, with a smaller proportion from others. Reported prices varied dramatically, ranging from MK200 to MK3,000 (with a mean and median of around MK1,000).

An important aspect of access to coupons is the timing of their distribution. As reported earlier (see table 12), timing of coupon distribution was considered to have improved over the life of the programme, continuing in 2010/11, particularly in the South and Centre. Specific information on the time of coupon receipt was collected from survey respondents and in the community survey. Community survey respondents reported a large proportion of communities receiving the first distribution of coupons in the first half of November in 2010/11 in the South (95%), 30% and 58% of communities in the Centre receiving coupons in the first and second halves of November, respectively, but only 19% of communities in the North receiving coupons by the middle of November (with 60% receiving them in the second half of November and 21% in the first half of December). As in previous surveys, timings reported by the household survey are a little later, with 99% and 83% coupons received by the end of November in the South and Centre respectively, and 98% by the end of December in the North. These dates are considerably earlier than reported in previous surveys (equivalent figures were 69%, 65% and 68% in 2008/9 and 54%, 49% and 45% in 2006/7), no doubt due in part to the absence of a second round of supplementary coupon distributions.

Most FGDs did not comment on the timing of coupon distribution – and exceptions to this tended to be where they were considered late – in one FGD each in Kasungu and Lilongwe, and both FGDs in Mzimba. Six FGDs suggested that there should be closer links with safety nets to assist poorer

households in financing coupon redemption, and one FGD suggested that this should be accompanied by earlier distribution – a point made in FGD discussion in previous years.

11. Coupon use and redemption

The vast majority (92%) of fertiliser coupons are reportedly used to buy fertilisers – this was lowest in the South (88%). The balance was given away to neighbours or relatives (1% in the South), sold (again 1% in the South) or not used (2% in the Centre and 11% in the South, 7% overall). Respondents also used a very high proportion of maize seed coupons to buy seed (97%), the balance being largely 'not used'. For legume seed coupons, however, only 81% were used to buy inputs, the balance being largely unused. The percentage of unused legume seed coupons was highest in the South (27%), followed by 8% in the North and only 2% in the Centre. Around 1% of legume seed coupons were given away, and roughly the same proportion sold[7]. The dominant reason given for not using the coupon to buy inputs was lack of stock at selling points (66% for fertilisers, 61% for maize seed and 75% for legume seed) but the importance of this varied between coupons (as the proportion of coupons not redeemed varied between coupon types, as noted above). Thus for fertiliser coupons, 5% of all coupons were not used because of lack of inputs at stockists, and equivalent figures for maize seed and legume seed were 2% and 14%. Female beneficiaries had a small tendency to use a smaller proportion of coupons for buying inputs (90% as compared with 94% for male beneficiaries, use of fertiliser coupons, and 76% as compared with 85% for male beneficiaries ' use of legume seed coupons). Teasing out the proportion of coupons not used for different reasons, there was small tendency for female beneficiaries to more often report lack of money as a reason for not redeeming inputs (this accounted for 1%, 2% and 2% respectively of maize seed, legume seed and fertiliser coupons received by female beneficiaries against 0%, 0% and 2% of maize seed, legume seed and fertiliser coupons received by male beneficiaries). It is, however, difficult to separate how far this may be due to gender differences and how far it may be due to regional differences in poverty incidence given that the proportion of coupons received by female beneficiaries was much higher in the south, where poverty incidence is highest.

As noted earlier, FGDs reported a small proportion of coupon purchases from others, and in mixed reports of selling of coupons or redeemed fertilisers, most reported that there was little or none, but that it was secret and difficult to know, and more likely by poorer households, and by men within them. Community survey respondents reported that selling of coupons was very rare, never occurring in the North and Centre and in 8% of areas in the South. Where it was reported, prices varied from MK500 to MK1000 per coupon, with MK1000 more common. FUM (2011) reports very low proportions of respondents knowing of people who bought or sold coupons.

Coupon redemption is affected by costs of redemption (in terms of input prices, side payments, time spent waiting and travelling, and other travelling costs) and by the ability and willingness of beneficiaries to incur those costs.

In the household survey, 9% of fertiliser coupons were reported to require payment of 'tips' for redemption above the official 500MK redemption price (this compares with 14% and 20% reported in 2008/9 and 2006/7 respectively). Reported extra payments ranged from 50MK to over 1,000MK, with the most common (4% of all coupons) being between 250 and 500MK per coupon (a total cost of 750 to 1,000MK for redemption and 'tip'). Mean redemption payment was MK536 per coupon, and it was identical for male and female beneficiaries and was lower in the North (mean of MK505 with only 4% or coupons reported to require extra payment). It is difficult to determine extra payments made for hybrid seed, as extra payments were required for some hybrid varieties. Mean payment was 81MK per coupon for redemption of hybrid seed coupons, and was higher for female beneficiaries (87MK compared with 74MK for men). Payments per hybrid seed coupon were also

[7] As will be explored later, use of a coupon to buy inputs does not mean that the inputs are necessarily used for crop production by the beneficiary.

lowest in the North and highest in the South (46, 58 and 98MK per coupon in the three regions). It is difficult to interpret these comparisons without detailed calculations on the proportion of different varieties purchased. However, no payments should have been required for OPV or legume seed, but 12% and 11% of respondents reported making some payment for OPV and legume seed respectively. FUM (2011) report that 5% of their sample of registered beneficiaries reported being asked to pay bribes for input redemption although 42% considered it common or very common to be asked for such a bribe and 50% considered it common or very common to be asked for a bribe to avoid queuing for input purchase[8]. However only 20% of those asked for a 'tip' reported that they had paid it (some because they could not afford it and others out of principle).

Community survey respondents suggested a greater occurrence of the need for farmers to pay 'tips', particularly in the Centre, with their 'often' being required in 51% of communities (64 in the Centre and none in the North), 'seldom' being required in 6% of communities, and 'never' being required in 43% of communities. Overall a median tip of 400Mk per bag was reported, with a higher figure of 450MK in the Centre. As compared with 2007/8 and 2008/9, the reported frequency of tipping has increased, but with a very significant reduction reported in the North and an increase in the Centre. A lower median of 200MK per bag was reported across the country in previous years. Focus group discussions also suggested that the payment of bribes to redeem inputs was more widespread than is suggested by the survey results, although it was not always clear if these were universal or for people who were not prepared to wait (of course such tips penalised the poor who had to wait). The payment of tips was therefore closely related to problems of queuing, as discussed below. FUM (2011) FGDs reported 'tips' that were varying between 200 and 1000MK per bag of fertiliser, and women being particularly vulnerable to these demands.

Table 13 presents summary data on reported distances to buy inputs, time spent buying inputs, and costs for transport and miscellaneous expenses. As with previous surveys, this does not show major differences between regions (except for distances to nearest private sector selling points). The greater distances to markets and larger differences in distances to ADMARC and private selling points tend to be in less populous areas and are thus masked in aggregation at national and regional levels. Distances to actually redeem coupons were greater where inputs were not stocked in the nearest outlet. Distances to the nearest private sector outlet were somewhat greater than distances to ADMARC/SFFRFM, particularly in the northern region. The lower time travelling and waiting for inputs in the North may be because of fewer stock outs (see table 14) and less queuing (consistent with lower payment of tips), so that lower waiting times outweighed any greater distances – although table 13 does not show longer distances in the north, and Mzimba is relatively well served with markets. This was also reported with the more widely distributed samples in 2008/9 and 2006/7. FGDs also reported well organised systems of different days for different villages to receive their inputs at markets, and this may have reduced waiting times. Key informants in the community questionnaire gave similar estimates of distances to the nearest ADMARC/SFFRFM outlets (median 4km, mean 6.4 km). Times reported for 2010/11 were higher than those reported for 2008/9, but this was not the case for expenses and distances. Times and costs for male and female beneficiaries appear to be similar. FUM (2011) reports in their sample of registered beneficiaries 15% reported significant problems with stockouts (with particular problems with fertilisers and legumes) and 8% reported significant problems with queues. Similar waiting times and costs for male and female beneficiaries were also reported, but the report helpfully notes particular difficulties faced by female beneficiaries while waiting.

[8] This divergence between perceived frequency and reported experience is interesting and may inform interpretation of FGD information – perhaps suggesting that the incidence of these problems is overstated in FGDs.

Table 13. Reported distances to buy inputs, time spent buying inputs, and costs for transport and miscellaneous expenses.

	Hours travel & waiting		Transport and misc expenses (MK)		Distance to nearest ADMARC (km)		Distance to nearest private selling point (km)	
	mean	Median	mean	median	mean	median	mean	median
Northern region	8	6	278	200	5	5	16	7
Central region	14	10	166	100	6	5	8	8
Southern Region	32	18	354	200	4	3	6	5
Female	22	11	259	200	4	3	8	6
Male	23	12	274	200	5	4	8	6
National: 2010/11	23	12	270	200	5	4	8	6
2008/9: National	17	9	304	200	9	5	14	8
2006/7: National	13	7	247	150	7	5	7	5

Community survey respondents reported on the frequency of stock-outs for different inputs, and these are summarised in table 14. The reported overall situation is markedly better than reported in 2008/9 as regards seed but slightly worse as regards fertilisers.

Table 14. Mean scores on frequency of stock outs by input by region

	Fertiliser		Seed				
	23:21	Urea	Hybrid	OPV	Beans	Gnuts	Soya
North	1.00	1.00	1.60	2.12	2.19	2.36	2.23
Centre	2.07	1.81	1.13	1.12	1.43	1.53	1.27
South	2.48	2.00	1.15	1.06	1.87	2.20	1.38
All 2010/11	2.19	1.85	1.16	1.19	1.54	1.68	1.34
All 2008/9	1.84	1.66	1.23	1.71	2.52	2.32	NA

Mean scores: 1 mostly available; 2 some stock outs; 3 frequent stockouts

Source: Community survey

Focus group discussions also noted shortages, fertiliser and legume seed being specifically mentioned. Where maize seed was in short supply there was one report of beneficiaries being forced to redeem their legume seed for seed they did not want, in order to get the maize seed that they did want (this was also reported in FUM (2011) FGDs). Stock outs for fertiliser were associated with long queues and led to increased travel to other markets where stock was reported – although these reports were not always reliable, leading to wasted trips. Although legume seed availability is much better than in 2008/9 – and that was recognised by some groups - there were still difficulties in obtaining the inputs that people wanted.

Table A6 in the annex shows how far beneficiaries who redeemed their coupons got the inputs that they wanted. This does not include information from those who did not redeem particular coupons – a situation affecting legume coupons the most, with only 85% of legume seed vouchers redeemed. On the whole beneficiaries got the fertilisers they wanted (99% of those who got 23:21 wanted it, and 97% of those who got urea wanted it). Of those who got hybrid seed, 84% wanted it and 13% wanted a different hybrid variety, while hardly any wanted OPVs (this is particularly remarkable in the South where almost all beneficiaries purchased hybrid seed, as shown in table 15). However, only 58% of those who got OPV seed wanted it, the majority of those who were dissatisfied wanting hybrid seed (40%, 50% of female beneficiaries). As regards legume seed, around 90% of those who got beans and groundnuts wanted them, but soya was less popular (wanted by only 56% of those

who got it). Some FGD groups reported that they did not want soya seed as it did not have a ready market. Legume seed shortages were widely reported and some seeds that were redeemed were consumed, particularly soya.

Table 15 Seed redemptions, % total maize and legume seed redemptions

	Beneficiary		Region			Total	% sales reported
	Male	Female	North	Centre	South		
Maize seed redemptions							
Hybrid	79%	94%	48%	77%	99%	86%	80%
OPV	21%	6%	52%	23%	1%	14%	20%
Legume seed redemptions							
Soya seed	37%	41%	7%	15%	68%	39%	14%
G/Nuts seed	38%	31%	49%	52%	17%	35%	74%
Beans seed	24%	26%	45%	32%	14%	25%	12%

There were some substantial differences between regions as regards redemption patterns for seed, as shown in table 15. The very high proportion of hybrid maize redemptions in the South and by female beneficiaries is notable, as is the high proportion of soya redemptions in the South. FGD reports suggest that the latter was largely due to lack of alternative legume seed types for sale. How far other regional patters were determined by seed availability is not clear, but as shown in table A6, there were very few people who received hybrid maize seed but wanted OPV seed, while there were substantial numbers who received OPV but would have preferred hybrid (although a 'forced' choice for OPV might have been due to either extra redemption payments needed for some hybrids, or lack of availability). It is not clear why there is a large discrepancy between different legume seeds' shares of purchases reported by households and shares of sales reported by the Logistics Unit – this may in part be 'small sample' problem with the relatively low volume of legume seed sales.

Table 16 Maize variety purchases and preferences, % households

Top varieties by purchase			Top varieties by preference		
1	KANYANI	26.4%	1	KANYANI	19.3%
2	MKANGO	13.6%	2	MKANGO	16.5%
3	DKC 8033	7.8%	3	DK 8033	14.6%
4	SEED CO 403	7.3%	4	DEMETER	7.9%
5	DK 8033	7.3%	5	MH 18	5.4%
6	DEMETER	6.9%	6	OPV	5.2%
7	OPV	3.4%	7	PANNAR 67	4.7%
8	PANNAR 67	3.4%	8	SEED CO 403	4.4%
9	MH 18	2.6%	9	OPV DIMETA	3.0%
10	NJOBVU	2.5%	10	MH 33	2.5%
11	SEED CO 409	1.9%	11	LOCAL	2.3%
12	OPV DAMETA	1.3%	12	NJOBVU	2.3%
13	DIMETA	1.2%	13	MAPASA	1.6%
14	MAPASA	1.2%	14	DK 33	1.5%
15	SEED CO 627	1.1%	15	SEED CO 627	1.3%

Table 16 compares the maize varieties farmers reported that they had received, and those that they prefer. There are difficulties with the different names used by farmers to describe varieties, but clearly there is some correspondence between these. The interest in hybrid varieties is supported by

the discussion above and also by discussion in FGDs, where a number of different hybrid varieties were mentioned for their storage and cooking qualities and also for their yield and early maturity.
As noted earlier, focus group discussions related the incidence of 'tips' and inflated fertiliser prices to the existence of queues, with queues being both a cause and result of demands for 'tips' (as queues encouraged some farmers to offer and sales staff to demand 'tips' for rapid service, and demands for 'tips' which were not met led to farmers waiting for late service). Queues were associated with limited availability of some inputs. 78% of outlets were reported in the community survey to suffer from frequent major queues (a similar proportion to that found for 2008/9 and 2006/7). An important point about queues is that their impact is greatest on poor people, as for some the additional payments to overcome the queues and limited time available made it impossible to redeem coupons.

Finally we consider how households who received coupons found the cash needed to redeem them. Table 17 summarises reports by recipients of coupons in the household survey, though problems of fungibility often make it difficult to identify precisely how particular cash expenditures are financed. The table shows that most households used general savings, and ganyu was also important. Investigation of differences by household characteristics shows variation in the relative importance of different sources, with female headed households relying a little more on gifts and ganyu, and falling dependence on savings and rising reliance on gifts and ganyu for more food insecure and lower welfare households. This is similar to information reported for 2008/9.

Table 17 Primary sources of cash for input purchase by region, gender & age of head, and subjective welfare & food security status (% coupon recipient households)

	savings	loan	gift	ganyu	other
North	76%	1%	4%	10%	8%
Centre	81%	2%	1%	13%	3%
South	67%	2%	5%	19%	8%
National	72%	1%	4%	15%	8%
Female headed	59%	1%	12%	19%	9%
Male headed	76%	2%	2%	13%	7%
Poorest (Ovutikitsitsa)	51%	2%	8%	30%	9%
Ovutika	68%	2%	5%	17%	9%
Ovutikilako	85%	0%	2%	8%	4%
>=wapakatikati	82%	0%	3%	3%	11%
Maize for 0-3 months	81%	7%	0%	12%	0%
Maize for 4-7 months	56%	0%	5%	30%	9%
Maize for 8-10 months	67%	0%	4%	17%	12%
Maize for >10 months	73%	4%	4%	13%	6%
National 2008/9	77%	2%	4%	11%	5%

Source: FISS3

Focus group discussions reported similar ways in which people accessed cash to redeem their coupons – and also selling livestock (like chickens, goats and pigs), selling maize they were storing. Income from safety nets was not generally reported to be very important – there were some exceptions, but this was limited by the extent and timing of public works programmes (the dominant form of safety net reported). FGDs differed as regards the desirability of linking safety net and FISP targeting – some groups argued that links assisted the poor in financing redemption, but it

was also considered that concentrating different programmes on the same beneficiaries sometimes led to ill feeling in the community.

As reported in 2008/9, the main form of safety net programme was public works in the form of road construction for MASAF. Both men and women got access to safety nets, but only limited numbers (less than 20 households) in any given villages were selected to participate. Households usually received 10 or 12 days of work each year and were paid MK200 / day.

Apart from safety nets, households responded in three other ways:

- First, as was common in 2006/07 and 2008/9, participants said that for those people who could not find money to redeem the coupon but still wanted to buy inputs, they could look for someone who had enough money to redeem the coupon and then share the bag in half. Others in similar situations just sold the coupon to buy food or drink beer
- Second, when attempts to get cash were not always successful some coupons simply went unused.
- Finally, as noted earlier, for other poor people who could not get their hands on cash, selling was the only other option allowing them to benefit from coupon receipt

12. Input purchases and use

Of the inputs obtained with coupons, the majority were reported as used on the respondents' plots. This applied to almost all fertilisers and maize seed. However, usage of legume seed was lower (at 75% overall), and was particularly low in the South (62% as compared with 85% and 89% in the Centre and North). With about 6% of legume seed kept over for the following year, the balance was reported as 'other', with roughly half of these specified as 'consumed' and half not specified (but it is likely that they were also consumed). In the South, 40% fell into this category (as compared with 4% in the Centre and North), with the differences largely driven by the larger proportion of legume seed taken as Soya in the South (as discussed earlier) and greater use of soya seed for consumption (36% consumed and other not specified) as compared with groundnuts and beans (with around 5% consumed and other not specified). However a higher proportion of beans and groundnuts were consumed (or other not specified in the South) and a smaller proportion of seeds kept for the next season. This might be due to the greater incidence of poverty in the South. A similar pattern was found comparing female and male beneficiaries (with the former consuming more and keeping less seed). FUM (2011) reports very similar findings as regards the majority of beneficiaries reporting use of input on the farms.

Respondents' reports of input purchases allow estimation of total subsidy and unsubsidised acquisitions, although the reduced sample size in the 2010/11 survey makes these estimates less reliable as compared with those for 2006/7 and 2008/9. Table 18 presents these estimates for 2010/11 and for 2008/9, and compares subsidy purchases with those reported by the Logistics Unit. As with estimation of total coupon distribution (see table 6), different estimates of national purchases are obtained with the different NSO and MoAFS estimates of rural households. It must be noted that the smaller sample in the 2010/11 survey reduces the reliability and the livelihood zone sampling and may introduce some bias leading to over-estimates of fertiliser use: this precludes the calculation of confidence intervals for national totals. Nevertheless examination of table 18 shows that

- Survey estimates of subsidised fertiliser purchases have remained roughly constant over the last four years whereas recorded subsidised sales fell by over 20% from 2007/8 to 2009/10 (higher survey estimates in 2009/10 and 2010/11 may be associated with the change in household sample in the 2010/11 survey and/or reduced fraud and diversion away from smallholder farmers).

- Survey estimates and subsidy sales records agree that subsidised maize and legume seed sales have increased substantially over the four years (the breakdown between hybrid and OPV sales is not shown in table 18, but both survey estimates and Logistics Unit reports show consistent increases in sales of hybrid seed over the four years and a large increase in OPV sales from 2009/10 to 2010/11).
- Survey estimates suggest that there have been substantial increases in sales of unsubsidised fertiliser from 2007/8 and 2008/9 to 2009/10 and 2010/11, which would be in line with lower fertiliser prices in these years (after very high prices in 2008/9) and increased cash availability and falling poverty in rural areas through rising ganyu rates and falling maize prices. These reported increases in fertiliser purchases make it difficult to estimate displacement of unsubsidised purchases by subsidised purchases, if fertiliser subsidies are also stimulating capacity to make unsubsidised fertiliser purchases. However, it should also be noted that some purchases recorded by households as 'unsubsidised' in that they bought them without using a coupon may actually be reselling of subsidised fertiliser that was illegally acquired (we examine this further in section 14).
- There is no particular pattern of change in survey estimates of changes in sales of unsubsidised maize seed.
- Survey estimates suggest that there have been increases in purchases of legume seed over the last two years.
- As regards estimates of national purchases, sales records for subsidised inputs generally (but not always) lie between estimates achieved with the NSO and MoAFS estimates of rural households / farm families. If we take the NSO population estimates as likely to be closer to the true population with the NSO (as opposed to MoAFS) household definition then this suggests that there is substantial leakage of inputs, of the order of 20% or more (as the estimated purchases with coupons are 20% less than recorded sales). We explore this further in section 14.

It should be noted that unsubsidised purchases include purchases (and indeed gifts) from neighbours, relatives, traders, and the local market as well as from ADMARC, SFFRFM, private input suppliers companies, farmer clubs and agro-dealers. In 2010/11 traders, relatives/ neighbours, local markets, ADMARC/SFFRFM, farmer clubs and private companies accounted for 9%, 7%, 3%, 20%, 14% and 44% of reported unsubsidised acquisitions respectively (with a similar pattern in 2009/10 compared with 20%, 8%, 9%, 16%, 1% and 46% in 2008/9 and similar proportions in 2007/8). However, if we distinguish between low and high price acquisitions (using a cut off price of 85MK/kg in 2009/10 and 2010/11and 150MK/kg in 2008/9 (with much of the lower priced purchases expected to be from reselling of subsidised fertilisers) then the share of traders, relatives/ neighbours, and local markets rises from 19% to 69% in lower price purchases while the share of ADMARC/SFFRFM is little changed but private companies' share falls to 7%. Private companies account for 46% of higher price sales. Low price unsubsidised acquisition amounted to 20% of all unsubsidised acquisition and 14% of reported subsidised acquisition – these figures are much lower than those recorded in 2008/9 (just over 40% and 30% respectively). The extent of low price sales may give some indication of the extent of reselling of subsidised inputs, but it should be noted that reselling of subsidised inputs leads to potential double counting across subsidised and unsubsidised acquisition if farmers acquire subsidised inputs and then share them or sell or give inputs, rather than coupons, to others.

Table 18 Household survey estimates of total input purchases

Input purchases	Subsidised (redeemed *with* coupons)			Unsubsidised (purchased *without* coupons)			Total		
	Fertiliser	Hybrid & OPV seed	Legume seed	Fertiliser	Hybrid & OPV seed	Legume seed	Fertiliser	Hybrid & OPV seed	Legume seed
2010/11									
Kg per hhold	52.2	3.4	0.7	86.3	2.0	1.1	138.4	5.3	1.8
Total '000MT, with NSO pop. Est *	125.5	8.2	1.6	233.1	4.8	2.8	358.6	15.9	15.9
Total '000MT, with MoAFS pop. *	204.8	13.4	2.7	390.9	8.1	4.8	595.7	26.2	7.4
LU Recorded sales ('000MT)	160.5	10.7	2.7				7.8		
2009/10									
Kg per hhold	52.7	2.3	0.4	100.2	1.5	0.7	152.9	4.7	1.1
Total '000MT, with NSO pop. Est *	122.6	5.4	0.9	232.9	3.6	1.6	355.5	10.9	2.5
Total '000MT, with MoAFS pop.*	201.8	8.9	1.5	383.3	5.9	2.6	585.1	17.9	4.1
LU Recorded sales ('000MT)	161.5	8.7	1.6						
2008/9									
Kg per hhold	52.0	1.8	N/A	43.7	2.1	N/A	95.7	4.0	N/A
Total '000MT, with NSO pop. est	129.9	4.7	N/A	109.1	5.4	N/A	239.1	10.0	N/A
Total '000MT, with MoAFS pop.	191.0	6.8	N/A	160.4	7.8	N/A	351.5	14.6	N/A
LU Recorded sales ('000MT)	197.5	5.3	N/A						
2007/8									
Kg per hhold	44.5	0.7	N/A	48.5	1.7	N/A	92.9	2.4	N/A
Total '000MT, with NSO pop. est	111.1	1.7	N/A	121.1	4.3	N/A	232.2	6.1	N/A
Total '000MT, with MoAFS pop.	163.3	2.5	N/A	178.0	6.4	N/A	341.4	8.9	N/A
LU Recorded sales ('000MT)	216.6	5.5	N/A						

** Calculated from regional totals adjusted by differences in % farm families registered as beneficiaries in sampled and unsampled districts*

Sources: 2008/99 and 2010/11 surveys, MoAFS Farm Household Register, 2008 Preliminary census report (Tables 4 & 5), MVAC data, Logistics Unit annual reports.

13. Technical advice

Proper use of subsidised seed and fertiliser is an important determinant of the impact of the FISP. Table 19 compares reported receipt of advice from field assistants by survey respondents categorised in different ways. The percentage of respondents reporting receipt of advice in the 2010/11 season (14%) is similar to that in 2008/9 but lower than in 2006/2007 (22%) and mean scores of the usefulness of advice are generally good (and similar to 2008/9 which was higher than in 2006/2007).

There is important variation in receipt of advice by different types of household, with female headed and lower welfare households receiving less advice. Differences in perceptions of the quality of advice are mixed. A similar pattern was reported in 2008/9 but recipients of coupons appeared to receive more advice – this is not evident in 2010/11.

Table 19 Receipt and quality of technical advice from Field Assistants by coupon recipient by region, gender & age of head, and subjective welfare & food security status

	All households				Fertiliser coupon recipients				Maize coupon recipients			
	New varieties		Fertilisers		New varieties		Fertilisers		New varieties		Fertilisers	
	% hh with advice	Scoring of advice	% hh with advice	Scoring of advice	% hh with advice	Scoring of advice	% hh with advice	Scoring of advice	% hh with advice	Scoring of advice	% hh with advice	Scoring of advice
North	28%	3.2	26%	3.3	29%	3.3	27%	3.4	25%	3.2	24%	3.3
Centre	6%	3.0	6%	3.3	6%	3.1	5%	3.4	8%	3.2	6%	3.5
South	19%	3.4	19%	3.3	21%	3.4	22%	3.3	22%	3.4	22%	3.3
National	14%	3.3	14%	3.3	15%	3.4	15%	3.3	17%	3.4	16%	3.3
Female headed	10%	2.9	10%	3.0	12%	3.0	12%	3.1	12%	2.9	13%	2.9
Male headed	15%	3.4	15%	3.4	17%	3.4	16%	3.4	18%	3.5	18%	3.4
Poorest (Ovutikitsitsa)	12%	3.3	13%	3.5	15%	3.2	15%	3.3	15%	3.2	15%	3.3
Ovutika	13%	3.4	13%	3.2	15%	3.5	15%	3.3	17%	3.4	16%	3.2
Ovutikilako	15%	3.0	14%	3.3	15%	3.0	15%	3.2	16%	3.0	16%	3.3
>=wapakatikati	15%	3.8	15%	3.6	18%	3.8	18%	3.6	20%	3.8	20%	3.6
Maize for 0-3 months	12%	4.0	14%	4.0	14%	4.0	19%	4.0	9%	4.0	14%	4.0
Maize for 4-7 months	13%	3.6	15%	3.2	16%	3.6	16%	3.2	18%	3.6	17%	3.2
Maize for 8-10 months	12%	3.2	12%	3.2	14%	3.1	14%	3.1	15%	3.1	15%	3.2
Maize for >10 months	8%	3.5	10%	3.4	9%	3.5	12%	3.3	12%	3.5	15%	3.3
National 2008/9	14%	3.2	14%	3.3	17%	3.3	17%	3.3	19%	3.4	18%	3.4

Scores: 1= useless; 2= not very useful; 3= average; 4=useful.

14. Diversion

It is extremely difficult to obtain estimates of diversion of coupons and inputs. These issues are difficult to gather objective information about, although complaints about corruption are common. As discussed earlier in section 8, the lack of transparency in coupon allocation when combined with excess demand for coupons leads to perceptions of and complaints about corruption and diversion

of coupons, and this may occur even in situations where these perceptions and complaints may not be warranted.

Ideally the scale of diversion of coupons could be determined by comparing the number of coupons issued against the estimated number of coupons received by households. However, as was clear in information in tables 5 and 18 and discussion in sections 6 and 12, the divergence in estimated number of households between the NSO census and the MoAFS farm registry makes this very difficult. Thus, with the NSO farm family estimate it appears that 2.7 million fertiliser coupons were received by smallholder farmers in 2010/11 against a recorded allocation of 3.2 million, leading to an estimate of 0.5 million 'missing' coupons (15% of those issued, compared to 28% in 2008/9). However, with the MoAFS farm family estimate it appears that 4.4 million fertiliser coupons were received by smallholder farmers in 2010/11 against a recorded allocation of 3.2 million, leading to receipts exceeding issues by 38% (compared to 5% in 2008/9). These difficulties are compounded by the lack of a nationally representative sample for the 2010/11 FISP survey. However, they do suggest that if the NSO figures are taken as being closer to the to the true population with the NSO (as opposed to MoAFS) household definition (as suggested by examination of the differences in regional changes in MoAFS figures and by the survey using NSO households for sampling and the NSO household definition) then high losses in 2008/9 have been substantially reduced in 2010/11.

We are, however, able to use the information presented in section 12 and table 18 for a more detailed examination of these very important issues. This information is used to trace out and estimate volumes and flows of coupons and fertilisers using the framework shown in figure7.

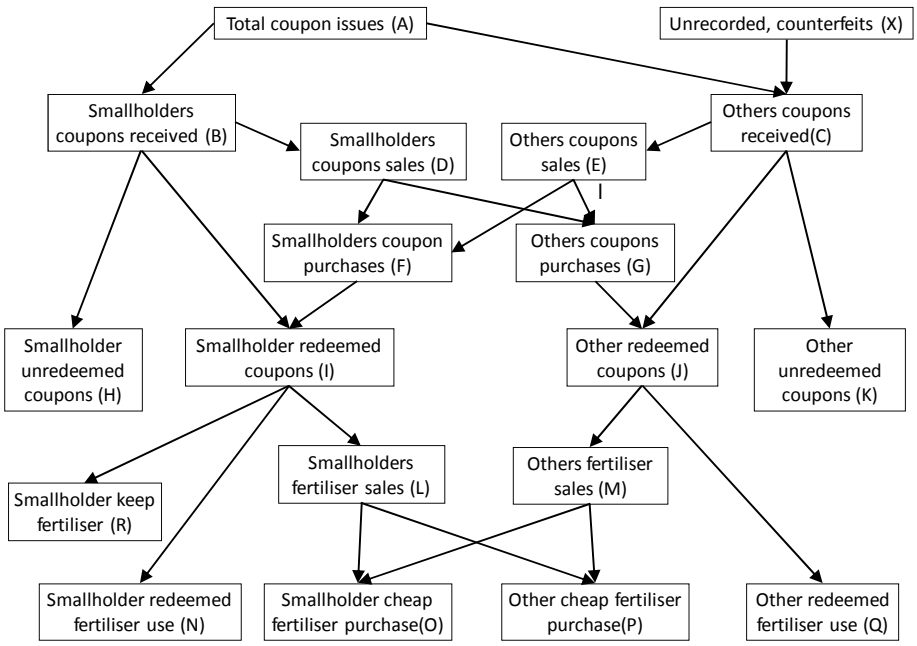


Figure 7 Framework for estimating flows of coupons and subsidised fertilisers

Table 20 Estimated volumes of coupon and subsidised fertiliser disbursement and purchases

Farm families / Rural households	20010/11 Low (NSO)	20010/11 Medium	20010/11 High (MoAFS)		2008/9 Low (NSO)	2008/9 Medium	2008/9 High (MoAFS)
Coupons ('000)							
Recorded issues (from MoAFS and Logistics Unit) – A	3,200	3,200	3,200		3,907	3,907	3,907
Received by smallholders, exc purchases - B (table 5)	2,733	3,576	4,420		2,654	3,279	3,903
Redemptions Total (from Logisitics Unit) - I+J	3,211	3,211	3,211		4,000	4,000	4,000
Smallholders – I (table 18)	2,510	3,303	4,096		2,682	3,313	3,944
Others (by subtraction) - J	700	-92	-885		1,318	687	56
Fertilisers (MT)							
Total subsidy sales (from Logistics Unit) - I+J	160,533	160,533	160,533		200,000	200,000	200,000
Smallholder redemption & use – N (table 18)	125,513	165,154	204,796		116,029	143,312	170,596
Smallholder low price purchases – O (section 12)	33,102	44,308	55,514		42,549	52,553	62,556
Total smallholder use - N+O	158,615	209,462	260,310		158,578	195,865	233,152
Others' low price / redemption use - P+Q (by subtraction)	1,918	-48,929	-99,777		41,422	4,135	-33,152
Coupons % recorded issues							
Recorded issues (from MoAFS and Logistics Unit) – A	100%	100%	100%		100%	100%	100%
Received by smallholders, exc purchases - B	85%	112%	138%		68%	84%	100%
Redemptions Total (from Logisitics Unit) - I+J	100%	100%	100%		102%	102%	102%
Smallholders – I	78%	103%	128%		69%	85%	101%
Others (by subtraction) - J	22%	-3%	-28%		34%	18%	1%
Fertilisers % subsidy sales							
Total subsidy sales (from Logistics Unit) - I+J	100%	100%	100%		100%	100%	100%
Smallholder redemption & use – N	78%	103%	128%		58%	72%	85%
Smallholder low price purchases – O	21%	28%	35%		21%	26%	31%
Total smallholder use - N+O	99%	130%	162%		79%	98%	117%
Others' low price / redemption use - P+Q	1%	-30%	-62%		21%	2%	-17%

Table 20 provides a summary of the main elements in figure 7 for three different population estimated using growth adjusted NSO 2008 census figures for rural households, MoAFS figures for registered farm families, and an intermediate population. For each population scenario in 2010/11 and 2008/9, estimates are shown of coupon disbursement, reception and redemption, and of subsidised fertiliser sales and purchases, by smallholders and 'others' (these encompass private companies, parastatals, traders, local officials and leaders, etc .). The estimates are derived from a detailed analysis following the framework in figure 7, and drawing on information presented in tables 5 and 18 and in the text of section 12. The legend shows the source and derivation of figures, and capital letters refer to the framework in figure 7.

The key points to note from table 20 with regard to 2010/11 are as follows:

- Across all population scenarios the estimated proportion of coupons received by smallholders is slightly larger for 2010/11 than for 2008/9, while total smallholder redemptions are similar as a proportion of coupons redeemed. As a consequence of these two observations, smallholder redemptions as a proportion of all issued coupons is greater in 2010/11 than in 2008/9. This suggests lower diversion of coupons in 2010/11. This calculation is derived from a higher estimate of coupons received per smallholder in 2010/11 as compared with 2008/9 (1.13 compared with 1.02) at the same time as the total number of coupons issues in 2010/11 was considerably lower than in 2008/9 (3.2 million compared with over 3.9 million).
- At the same time the percentage of total subsidy sales that were redeemed by smallholders is considerably higher in 2010/11 than 2008/9 (in line with the higher estimates of coupons received per household) but low price purchases without coupons (presumed to largely result from diverted coupons[9]) are about similar as a percentage of total subsidised sales (and hence a lower absolute amount) in 2010/11. Total smallholder purchases of subsidised purchases (both by direct redemption and purchase of low price fertiliser) are therefore much higher in 2010/11 as a percentage of total subsidised sales.
- Consideration of both coupon flows and fertiliser purchases therefore suggest that diversion of subsidised fertiliser was much lower in 2010/11 than in 2008/9.
- Estimates of others' redemption of coupons and use of fertiliser are negative for intermediate and MoAFS population estimates, suggesting that the actual population lies between the NSO and intermediate estimates. If we take the NSO population estimates as likely to be closer to the true population within the NSO (as opposed to MoAFS) household definition, then from 2008/9 to 2010/11
    - estimated diversion of coupons fell from 32% to 15%,
    - redemption by others (non-smallholders) of diverted coupons and of coupons purchased from smallholders fell from 34% to 22% of total coupons issued,
    - smallholder redemption and use of subsidised fertiliser rose from 58% to 69%, and
    - use by others (non-smallholders) of subsidised fertilisers fell from 21% to 1%.
- Using an assumption that others benefit from 100% of the subsidy when they obtain diverted coupons and use the redeemed fertiliser, but they gain 'only' 50% of the subsidy benefit when

[9] In 2008/9, when fertiliser prices were much higher, there was a much greater range of fertiliser prices reported by respondents, and the cut –off point for 'low price' purchases was set at 150 MK/kg, around 70% of the standard commercial price when buying fertiliser in 50kg bags. For 2010/11the examination of the data suggested the use of a cut off point of 85MK/kg, around 85% of the standard commercial price in 50kg bags 85%. However it should be recognised that some of the higher price purchases could be for stock from the subsidy as some traders may buy subsidized fertilizers and sell it as if it were commercial, particularly when selling in smaller quantities. Allowance for this might suggest somewhat higher reselling of subsidised purchases than estimated above, in which case estimates of 'others low price redemption and use, P+Q' would fall but the broader conclusions of this section would not be significantly changed – indeed some would strengthened.

they obtain diverted coupons, or buy coupons and sell the fertiliser to smallholders, then we can roughly estimate the % of fertiliser subsidy captured by others. With the NSO population estimates the proportion of fertiliser subsidy captured by others fell from 27% of the subsidy in 2008/9 to 12% in 2010/12. Since the subsidy volume was approximately 25% higher in 2008/9 and the price of fertilisers was approximately 65% higher, the estimated loss through diversion fell by just under 80% from 2008/9 to 2010/11[10].

- Although fairly precise estimates are presented above, these should be taken as illustrative – sampling error will affect survey estimates, and there is also uncertainty regarding the number of farm families and this, as table 20 shows, affects the calculations. However some relatively robust general conclusions can be drawn from this, in the context of other information presented in this report:
    - Total rural households are likely to be closer to the NSO estimate than the MoAFS estimate, using the NSO definition of rural household and the estimates of coupon receipts and redemptions in the household survey
    - There have been substantial reductions in the extent and value of diversion of subsidised fertiliser from 2008/9 to 2010/11
    - Nevertheless it is likely that there is still substantial diversion of fertiliser subsidy benefits away from smallholders (this is likely to amount to between 5 and 10% of the value of the total value of the fertiliser subsidy)
- These conclusions regarding declining diversion are compatible with the continued observation in the FGDs of variable but widespread diversion of coupons in rural areas (by government staff, TAs, headmen and VDC members): table 20 suggests that with the substantial decline in the overall subsidy volume, the main reduction in diversion has been in coupons and fertilisers that never reached rural areas ("Others' low price / redemption use - P+Q" has almost ceased) while the more locally visible volume of resales of cheaper fertilisers in rural areas (smallholder low price purchases –O) has fallen by under 25%.
- As in 2008/9 it should be noted that the losses to the programme and to smallholders in terms of purchases of lower priced fertiliser are smaller than would be inferred from consideration of leakage of coupons alone, since resale of coupons or subsidised fertiliser to smallholders gives them some (reduced) share of subsidy benefits. Nevertheless, the estimated losses to smallholders and the government are still large in absolute terms if this analysis is correct.
- Finally we note that the analysis can inform estimation of the extent to which the fertiliser subsidy displaces commercial sales, as we can expect low rates of displacement for smallholders redeeming subsidised fertilisers with their own coupons, intermediate rates of displacement for smallholders purchasing of low price fertilisers redeemed by others, and higher displacement for others who have illegally obtained coupons for their own use or for sale to commercial farmers or urban households.

A similar analysis for maize seeds in 2010/11 (see table 21) suggests that

- there were substantial numbers of counterfeit maize seed coupons (25% more coupons were redeemed than issued, and since it is unlikely that 100% of seed coupons were redeemed, the real number of counterfeit coupons redeemed may be higher),
- there was very little diversion of maize seed coupons from smallholders to others, but
- smallholders may have bought significant quantities of the subsidised seed (this estimate depends upon the number of farm households).

[10] This calculation allows for the higher redemption price of 800MK/bag in 2008/9 as compared with 500MK/bag in 2010/11.

Table 21 Estimated volumes of coupon and subsidised maize seed disbursement and purchases

Farm families / Rural households		20010/11 Low (NSO)	Medium	High (MoAFS)
Coupons ('000)				
Recorded issues (from MoAFS and Logistics Unit) – A		1,600	1,600	1,600
Received by smallholders, exc purchases - B (table 5)		1,613	2,131	2,649
Received by others (by subtraction) - A-B = C-X		-13	-531	-1,049
Redemptions	Total (from Logisitics Unit) - I+J	1,988	1,988	1,988
	Smallholders – I (table 18)	1,495	1,970	2,444
	Others (by subtraction) - J	493	18	-456
	Counterfeits redeemed (minimum)	388	388	388
Maize seed (MT)				
Total subsidy sales (from Logistics Unit) - I+J		10,650	10,650	10,650
Smallholder redemption & use – N (table 18)		8,176	10,771	13,365
Others' redemption - J by subtraction		2,474	-121	-2,715
Coupons % recorded issues				
Recorded issues (from MoAFS and Logistics Unit) – A		100%	100%	100%
Received by smallholders, exc purchases - B		101%	133%	166%
Received by others (by subtraction) - A-B = C-X		-1%	-33%	-66%
Redemptions	Total (from Logisitics Unit) - I+J	124%	124%	124%
	Smallholders – I	93%	123%	153%
	Others (by subtraction) - J	24%	24%	24%
	Counterfeits redeemed (minimum)	24%	24%	24%
Fertilisers % subsidy sales				
Total subsidy sales (from Logistics Unit) - I+J		100%	100%	100%
Smallholder redemption & use – N		77%	101%	125%
Others' redemption - J by subtraction		23%	-1%	-25%

15. Programme costs

Overall costs of the programme are difficult to estimate due to lack of documented administrative costs borne by the MoAFS and other organisations involved in the implementation of the subsidy. The available figures therefore reflect the documented costs of the programme; the true costs may be understated by as much as 10 percent. However, programme costs fell dramatically from 2008/9 to 2009/10 and 2010/11, due to reduced fertiliser prices and to improved control of subsidy volumes. These savings on fertiliser costs were offset to a very limited extent by increased volumes and costs of subsidised maize and legume seed.

In 2009/10 actual expenditure was estimated at MK 15.5 billion (US$110 million) before farmer redemption payments (6.7 percent of the national budget). These figures were much lower than for 2008/9 (MK33.9 billion, US$265 million and 16.2% respectively) when volumes and particularly fertiliser prices were much higher. The budget for the subsidy programme in the 2010/11 national budget was 19.7 billion Malawi Kwacha (US$130 million). This budgetary provision represented 62% of the MoAFS budget allocation and 6.8% of the national budget. The documented actual expenditure on the FISP before farmer repayments on fertiliser purchases in 2010/11 is MK23.4 billion (US$154 million), including donor funded activities. This figure excludes the cost of implementing the programme by the Ministry of Agriculture and other field agencies, and the cost of printing vouchers. Rather than ignore these costs we have introduced an estimate of these costs (see table 22). The MoAFS operational cost estimates take account of the way that most of the operations of the MoAFS are focused on the implementation of the subsidy programme in the first two to three months of the agricultural season. Although not all MoAFS activities in this period are concerned with the subsidy programme, the majority are, and there are other costs outside this period, as well as the costs of field agencies involved in coupon allocation and distribution. These estimates, of MK1.2 billion (US$7.6 million), may be considered conservative.

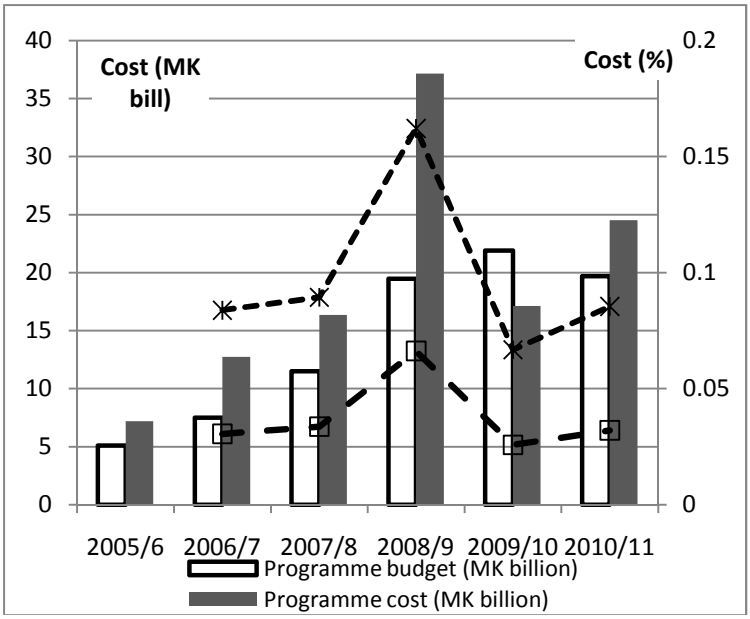


Figure 8 Trends in Agricultural Input Subsidy Costs, 2005/06 – 2010/11

Note: All costs are before any deduction of farmers redemption and exclude estimated costs.

Sources: Logistics Units reports; Dorward and Chirwa (2009, 2010)

Figure 8 presents the trends in the cost of the agricultural input subsidy since the 2005/06 agricultural season. The graph shows a steady rise in budgeted costs, apart from a fall in 2010/11, while actual costs peaked in 2008/9 due to high fertiliser volumes and very high prices. Costs fell back dramatically in 2009/10 with reduced fertiliser prices and effective control of subsidised volumes, but have risen again in 2010/11 (though not to 2008/9 levels) due largely to rising fertiliser prices and increased volumes of subsidised seed. The programme has run over budget in all years except 2009/10. From 2006/7 to 2008/9 budget over-runs were due to lack of budgetary control in fertiliser disbursement and under-estimates of fertiliser prices. In 2005/6 and 2010/11 there were no over-runs in fertiliser disbursement so budget over-runs would appear to be due mainly to under-

estimates of input or other costs, although in 2010/11 there was a 25% over run in maize seed sales due to redemption of counterfeit coupons, the consequent 0.7 billion MK cost of this only explains a part of the overall cost overrun[11].

Table 22 shows the cost structure of the 2010/11 subsidy programme, with the first part covering only recorded costs. These amount to 23.4 million MK before deduction of farmer repayments. There are a number of unrecorded or unattributed direct costs of the subsidy programme as noted earlier. Lack of clear information on these makes it difficult to properly gauge the total cost of the programme, and where these costs are funded from other budgets then other budgeted activities may suffer.

Table 22 Cost and Financing of the 2010/11 FISP

Description	Malawi Kwacha
Recorded costs	
Seeds - legumes	1,008,904,900
Seeds – maize	3,280,310,000
Fertiliser	17,470,953,865
Transport Costs	901,167,898
Logistics Unit operational costs	52,203,151
ADMARC operational costs	340,000,000
ADMARC operational costs	310,000,000
Total recorded costs	**23,363,539,814**
Less: Farmer redemption due	1,605,290,000
Unused stock for buyback	
Net recorded Costs	**21,758,249,814**
Estimated other costs*	
Ministry of Agriculture operations	1,100,000,000
Voucher printing	20,000,000
Other agencies' field costs	32,000,000
Total estimated other costs	**1,152,000,000**
Total net costs, recorded and estimated	**22,910,249,814**
Funding	
Direct Donor Support	3,341,384,409
Government of Malawi	19,568,865,405

* Actual figures for these items are not known. MoAFS operational costs on the subsidy were estimated in 2008/9 as equivalent to 20% of the recurrent MoAFS expenditure budget net of subsidy (as MoAFS operations are largely but not exclusively focused on the subsidy implementation for at least three months in an agricultural season) and this figure has been retained to 2010/11. Estimates of voucher printing and field costs paid to other agencies involved in coupon allocation and distribution have also been carried forward from 2008/9. TA costs excluded.

Source of recorded costs: Logistics Unit Final Report 2011

As noted earlier, it has not been possible to obtain information on costs of subsidised grain storage chemicals and these are not included in table 22.

Donors contributed to the 2010/11 FISP directly and through budget support. The direct support constituted 15% of the estimated total costs after deduction of farmer repayments and covered

[11] This, and data for other years in figure 8, assumes that the budget figures are for total subsidy programme expenditure by government and donors, and that only a small part of the farmer redemption payments are recovered by the Treasury. We have not been able to obtain consistent information on these issues.

costs of seeds, the logistic unit operating costs and monitoring and evaluation. Donors also supported the subsidy indirectly through budget support.

16. Conclusions

This report has presented a review of 2010/11 FISP implementation and of farmers' access to and use of subsidised inputs. Many of the findings complement those in FUM (2011). Based on this review we now present the main achievements of the programme, and consider continuing and emerging challenges.

In many ways the implementation of the 2010/11 FISP can be regarded as highly successful. As in previous years it overcome major logistical and coordination challenges to deliver very large numbers of small quantities of different inputs to farmers dispersed across the country in time for their use in crop production. However, there were a number of substantial improvements over previous years

- Timeliness: purchase and delivery of fertilisers was more timely than in previous years so that uplifts into markets and sales were earlier than, or as early as, in previous years, despite the absence of any significant brought forward stocks;
- Control of sales: as in 2009/10, the 2010/11 programme achieved excellent control of fertiliser sales within budgeted quantities (although this was not the case with maize seed sales which were just below 25% over budget);
- Seed sales: improved seed sales included a wide range of different hybrid and OPV maize varieties, with larger packs and volumes than in previous years, and continued strong growth in the quantities and range of legume seed sales offered (although there continue to be challenges in improving the range, volume and quality of legume seed on offer);
- Regional allocations: the 2009/10 regional allocation of coupons has been retained, which has given a much more equitable per rural household distribution of coupons and inputs between the three regions and has improved the geographical poverty targeting of the programme;
- Beneficiary identification: the system of open meetings for beneficiary identification, introduced in 2008/9, continues to be implemented and is generally recognised as offering significant improvements over systems used in previous years;
- Good practice: some district, EPA and village groups, staff and stakeholders have developed particularly effective methods for coupon allocation, distribution and redemption – for example the involvement of accountable local (village) committees in sensitisation, beneficiary registration and coupon distribution, distribution centre liaison committees, scheduling of particular days for input sales to different villages, and separate queues for men and women waiting to redeem coupons.
- Diversion: although accurate and reliable data are very difficult to come by, it appears that the scale and scope of diversion of coupons and subsidised inputs has been markedly reduced over the last two years – partly but not only through increased control of sales mentioned above – and this is improving the effectiveness and efficiency of the programme and reducing its cost.

While these improvements and achievements are applauded, they of course reveal or even create new challenges, while dealing with others that were recognised before may became more important. From this review of the 2010/11 programme we highlight the following new and continuing challenges as the programme moves forward:

- Timeliness: despite the earlier availability of fertilisers to depots, timely delivery to markets was held up by shortages of storage space in those markets and in depots, and by transport and restocking constraints in the short sales period, and this very short sales period was due to relatively late delivery of coupons to districts and issue to beneficiaries, as a result of slow finalisation of registered beneficiaries;
- Control of sales: despite the largely very effective control of fertiliser sales under the programme, maize seed sales were nearly 25% over budget, and this appears to be largely due to acceptance of duplicate and counterfeit coupons as a result of poor security features on the coupons and poor understanding of these features by all engaged in the coupon process – it is not clear why there was not a similar problem with fertilisers;
- Seed sales: despite the increased volume and range of legume seed accessed by farmers, there were still problems of lack of stock of the seeds that farmers wanted, and reports that some traders were using availability of desirable seed legume as a means of forcing farmers to buy maize seed that they would not otherwise have bought;
- Beneficiary identification: despite the general approval of open meetings as a means for improving transparency, representation and accountability in beneficiary identification, they and farm family registers are sometimes used in ways that reduce transparency and accountability and promote suspicion;
- Good practice: the existence of good practice in some districts, EPA and village procedures unfortunately appears to be co-exist with bad practice in others – involving lack of transparency, lack accountability, and suspicion of fraud;
- Beneficiary targeting: although some aspects of beneficiary targeting appear to have improved since the early years of the programme, with widespread agreement among stakeholders regarding targeting criteria, there are continuing difficulties in operationalising definitions of targeted beneficiaries. Definitions of the 'resource poor' are loose and particularly difficult to implement in situations where there are large numbers of poor people relative to the number of coupons. As a result there is no survey evidence that poorer and more vulnerable households are more likely to receive coupons than less poor and less vulnerable households, and there is widespread sharing of coupons. This sharing does not address the current fundamental targeting difficulties and although it may favour the excluded poor it penalizes the included poor as they tend to be the ones that share coupons while the better off retain their sets of coupons. There continue to be diverse views among rural communities and different stakeholders regarding the best ways to address this;
- Coupon redemption: there are continuing concerns among farmers, particularly poorer and women beneficiaries, about difficulties that they face in redeeming coupons, particularly fertiliser coupons, as a result of time spent in queues and demands for 'tips' either to redeem coupons or to get timely service;
- Extension advice: despite generally good appreciation of extension advice on input use by those farmers who have received such advice, receipt of such advice is reported by relatively few (and less poor, male) farmers;
- Diversion: despite the apparent progress in reducing corruption and fraud there is, inevitably perhaps, continuing FGD and survey evidence of diversion of coupons, together with Logistics Unit evidence of redemption of coupons with duplicate numbers or questionable security features.
- Cost control: after the 2009/10 achievement of programme costs coming in under the budgeted amount, 2010/11 costs have again exceeded the budget – although the budgeting and control reasons for this are not clear.

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Glossary of Acronyms and Terms – *to be finalised*

ADD	Agricultural Development Division
ADMARC	Agricultural Development and Marketing Corporation
agro-dealers	Small scale private input retailers
AISAM	Agricultural Input Suppliers Association of Malawi
AISP	Agricultural Input Subsidy Programme
AISS	Agricultural Input Subsidy Survey
AU	African Union
Bomas	District administrative / commercial centres
CNFA	Citizens Network for Foreign Affairs
CPI	Consumer Price Index
DfID	Department for International Development
Dimba	Wetland cultivated in the dry season
EU	European Union
FEWSNET	Famine Early Warning System Network
FAO	Food and Agriculture Organization of the United Nations
FISP	Farm Input Subsidy Programme
Ganyu	hired casual labour
GDP	Gross Domestic Product
GOM	Government of Malawi
IHS2	Integrated Household Survey (2004)
IMF	International Monetary Fund
LU	Logistics Unit
MASAF	Malawi Social Action Fund
MK	Malawi Kwacha (MK140 to the US$)
MOAFS	Ministry of Agriculture and Food Security
MRFC	Malawi Rural Finance Company
MVAC	Malawi Vulnerability Action Committee
NASFAM	National Smallholder Farmers Association of Malawi
NEPAD	New Economic Partnership for African Development
NFRA	National Food Reserve Agency
NGO	Non-Governmental Organization

NPV	Net Present Value
NSO	National Statistical Office
OPV	Open pollinated varieties (of maize)
PRSP	Poverty Reduction Strategy Paper
RBM	Reserve Bank of Malawi
SFFRFM	Smallholder Farmers' Fertilizer Revolving Fund of Malawi
SGR	Strategic Grain Reserve
TIP	Targeted Inputs Program

Livelihood zones

KAS	Kasungu-Lilongwe Plain
MSH	Middle Shire
MZS	Mzimba Self-Sufficient
PHA	Lake Chilwa - Phalombe Plain
RFT	Rift Valley Escarpment
SHI	Shire Highlands
TMT	Thyolo-Mulanje Tea Estates
WRM	Western Rumphi and Mzimba

Appendix: Supplementary tables

Table A1: Timing of fertiliser deliveries and sales

(% of total parastatal sales)

	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11
Cumulative Depot receipts						
End Oct	n.a.	32%	55%	49%	77%	79%
End Nov	n.a.	77%	72%	69%	97%	91%
End Dec	n.a.	95%	85%	91%	100%	100%
Cumulative Depot uplifts						
End Oct	n.a.	7%	39%	61%	50%	69%
End Nov	n.a.	64%	70%	75%	81%	86%
End Dec	n.a.	96%	85%	91%	96%	98%
Cumulative Sales						
End Nov	n.a.	8%	n.a.	33%	41%	35%
End Dec	47%	74%	64%	72%	85%	92%
End Jan	n.a.	96%	88%	94%	98%	98%

Table A2: Beneficiary registrations by district

	MoAFS Farm families	Target	% by district	% Female	% Male	% Unalloc-ated	Beneficiaries as % MoAFS farm families	Beneficiaries as % NSO rural households
Chitipa	59,151	30,093	2%	26%	68%	6%	0.51	0.74
Karonga	65,933	26,385	2%	33%	67%	0%	0.40	0.42
Likoma	2,219	1,183	0%	46%	53%	2%	0.53	0.56
Mzimba	262,235	106,800	7%	38%	62%	0%	0.41	0.70
Nkhata Bay	59,144	24,056	2%	35%	65%	0%	0.41	0.54
Rumphi	58,123	29,330	2%	38%	62%	0%	0.50	0.76
Northern region	**506,805**	**217,847**	**14%**	**35%**	**64%**	**1%**	**0.43**	**0.66**
Dedza	245,121	67,536	4%	41%	58%	0%	0.28	0.44
Dowa	263,967	72,782	5%	33%	67%	0%	0.28	0.56
Kasungu	292,680	90,325	6%	33%	65%	2%	0.31	0.67
Lilongwe	462,049	160,572	10%	23%	76%	1%	0.35	0.55
Mchinji	176,874	69,816	4%	32%	67%	0%	0.39	0.67
Nkhotakota	85,551	31,557	2%	58%	41%	1%	0.37	0.48
Ntcheu	174,942	73,120	5%	45%	54%	0%	0.42	0.61
Ntchisi	125,708	41,357	3%	36%	61%	1%	0.33	0.82
Salima	99,364	36,940	2%	33%	67%	0%	0.37	0.45
Central region	**1,926,256**	**644,005**	**40%**	**34%**	**65%**	**1%**	**0.33**	**0.61**
Balaka	119,942	53,664	3%	53%	45%	1%	0.45	0.68
Blantyre	179,688	94,403	6%	56%	43%	0%	0.53	1.15
Chikwawa	125,552	19,295	1%	33%	67%	0%	0.15	0.19
Chiradzulu	101,862	52,549	3%	59%	41%	0%	0.52	0.71
Machinga	199,029	65,119	4%	49%	36%	15%	0.33	0.54
Mangochi	256,066	75,729	5%	58%	41%	0%	0.30	0.39
Mulanje	188,992	76,299	5%	42%	49%	8%	0.40	0.58
Mwanza	29,358	15,455	1%	55%	45%	0%	0.53	0.65
Neno	33,605	17,326	1%	39%	61%	0%	0.52	0.63
Nsanje	74,192	15,202	1%	37%	62%	1%	0.20	0.28
Phalombe	99,320	60,145	4%	52%	45%	3%	0.61	0.75
Thyolo	198,846	101,746	6%	46%	53%	1%	0.51	0.68
Zomba	227,818	91,216	6%	60%	40%	0%	0.40	0.62
Southern region	**1,834,270**	**738,148**	**46%**	**52%**	**45%**	**3%**	**0.40**	**0.58**
National total	**4,267,331**	**1,600,000**	**100%**	**42%**	**56%**	**2%**	**0.37**	**0.60**

* Calculated from NSO (2008), 2008 census, excludes Mzuzu, Lilongwe, Zomba and Blantyre City households but includes urban households in district towns

Table A3: Fertiliser voucher redemption per farm family by region and season

	2005/6	2006/7	2007/8	2008/9	2009/10	2010/11
Vouchers / MoAFS farm family						
North	1.30	1.51	1.55	1.45	0.85	0.86
Centre	1.05	1.28	1.42	0.98	0.67	0.67
South	0.49	0.73	0.96	1.06	0.83	0.81
All	0.80	1.04	1.22	1.08	0.76	0.75
Vouchers / NSO rural household						
North	1.73	2.15	2.53	2.37	1.41	1.39
Centre	1.29	1.65	2.01	1.50	1.21	1.20
South	0.70	1.02	1.32	1.47	1.25	1.22
All	1.06	1.41	1.75	1.59	1.25	1.23

Note: NSO rural household estimates are calculated from livelihood zone estimates (not district estimates) and exclude urban areas outside cities. They therefore differ slightly from table A2 estimates which include urban areas outside cities.
Source: Calculations from Logistics Unit (2011), NSO(2008), MVAC livelihood zone data

Table A4: Population growth rates by region by season

		2005-6	2006-7	2007-8	2008-9	2009-10	Average
MoAFS farm families							
North		7.31%	14.93%	0.14%	4.82%	1.01%	5.51%
Centre		5.26%	10.80%	8.27%	20.19%	1.71%	9.07%
South		-0.88%	-1.74%	0.93%	10.66%	2.43%	2.19%
All		2.53%	5.11%	3.84%	13.99%	1.94%	5.39%
NSO rural households							
North		0.07%	0.07%	0.07%	3.54%	3.42%	1.42%
Centre		0.07%	0.07%	0.07%	2.79%	2.71%	1.13%
South		0.07%	0.07%	0.07%	2.09%	2.05%	0.86%
All		0.07%	0.07%	0.07%	2.55%	2.49%	1.04%

Note: Change in NSO rural household growth after 2007/8 due to 2008 census information
Source: Calculations from Logistics Unit (2011), NSO(2008), MVAC livelihood zone data

Table A5: Fertiliser Coupon targeting by livelihood zone

		Household head		Months Maize				Wellbeing			
		Male	Female	0-3	4-7	8-10	>10	Poorest (Ovutikitsitsa)	Ovutika	Ovuti-kilako	>=wapa-katikati
WRM	Sample hh	34	6	0	5	14	11	3	22	9	4
	% no coupons	13%	46%		0%	26%	21%	29%	16%	17%	15%
	mean/recipient	1.83	1.68		1.60	1.90	1.94	2.00	1.72	1.94	1.99
MZS	Sample hh	50	10	2	6	12	9	8	31	14	7
	% no coupons	28%	26%	0%	66%	23%	25%	51%	16%	39%	32%
	mean/recipient	1.76	1.93	1.50	1.50	2.00	1.54	1.48	1.84	1.85	1.68
KAS	Sample hh	144	36	2	22	50	28	30	64	54	31
	% no coupons	33%	46%	52%	46%	45%	25%	53%	40%	31%	22%
	mean/recipient	1.38	1.20	0.10	1.09	1.33	1.26	1.11	1.33	1.29	1.65
RFT	Sample hh	41	19	0	2	12	12	14	30	12	4
	% no coupons	6%	13%		0%	22%	0%	15%	0%	0%	58%
	mean/recipient	1.22	1.41		1.50	1.10	1.13	1.16	1.28	1.27	2.00
MSH	Sample hh	47	13	1	19	14	5	7	27	12	14
	% no coupons	11%	6%	100%	4%	17%	20%	10%	15%	0%	6%
	mean/recipient	1.76	1.67	0.00	1.64	1.67	1.75	1.47	1.67	1.90	1.84
PHA	Sample hh	99	41	4	32	46	21	34	68	23	14
	% no coupons	5%	27%	0%	17%	4%	18%	28%	4%	7%	7%
	mean/recipient	1.28	1.19	1.00	1.35	1.16	1.35	1.23	1.29	1.28	1.15
SHI	Sample hh	101	39	3	38	45	9	30	44	41	25
	% no coupons	14%	3%	73%	18%	5%	0%	10%	11%	12%	9%
	mean/recipient	1.46	1.43	2.00	1.40	1.40	1.22	1.31	1.45	1.38	1.75
TMT	Sample hh	51	29	11	27	22	3	37	31	8	4
	% no coupons	9%	22%	43%	5%	18%	23%	18%	14%	9%	0%
	mean/recipient	1.59	1.59	1.21	1.63	1.44	1.25	1.46	1.49	2.20	2.37
Total	Sample hh	567	193	23	151	215	98	163	317	173	103
	% no coupons	20%	25%	40%	21%	25%	17%	22%	29%	19%	21%
	mean/recipient	1.45	1.41	1.17	1.46	1.39	1.37	1.29	1.42	1.42	1.69

Table A6: Inputs received by inputs wanted by region by beneficiary gender

		Input wanted								
	Input obtained	Got what wanted	23:21:0+S /Chitowe	Urea	Hybrid seeds	OPV seeds	Soya seed	G/Nuts seed	Beans seed	Pigeon pea
North	23:21:0+S /Chitowe	100%	0%	0%	0%	0%	0%	0%	0%	0%
	Urea	100%	0%	0%	0%	0%	0%	0%	0%	0%
	Hybrid seeds	88%	0%	0%	9%*	3%	0%	0%	0%	0%
	OPV maize seeds	70%	0%	0%	30%	0%	0%	0%	0%	0%
	Soya seed	72%	0%	0%	0%	0%	0%	28%	0%	0%
	G/Nuts seed	96%	0%	0%	0%	0%	0%	0%	4%	0%
	Beans seed	87%	0%	0%	0%	0%	0%	13%	0%	0%
	Total	92%	0%	0%	6%	0%	0%	1%	0%	0%
Centre	23:21:0+S /Chitowe	99%	0%	1%	0%	0%	0%	0%	0%	0%
	Urea	95%	5%	0%	0%	0%	0%	0%	0%	0%
	Hybrid seeds	85%	0%	0%	14%*	1%	0%	0%	0%	0%
	OPV maize seeds	56%	0%	0%	44%	0%	0%	0%	0%	0%
	Soya seed	66%	0%	0%	0%	0%	0%	34%	0%	0%
	G/Nuts seed	93%	0%	0%	0%	0%	0%	2%	5%	0%
	Beans seed	78%	0%	0%	0%	0%	0%	22%	0%	0%
	Total	88%	1%	0%	7%	0%	0%	2%	0%	0%
South	23:21:0+S /Chitowe	99%	0%	0%	0%	0%	0%	0%	0%	0%
	Urea	98%	1%	0%	0%	0%	0%	0%	0%	0%
	Hybrid seeds	83%	1%	0%	13%*	0%	0%	0%	0%	0%
	OPV maize seeds	12%	0%	0%	43%	0%	44%	0%	0%	0%
	Soya seed	54%	0%	0%	0%	0%	0%	35%	11%	1%
	G/Nuts seed	96%	0%	0%	0%	0%	0%	0%	4%	0%
	Beans seed	97%	0%	0%	0%	0%	0%	3%	0%	0%
	Total	88%	1%	0%	5%	0%	0%	4%	1%	0%

* Households who got hybrid seed but not the variety that they wanted

Table A6 (cont) : Inputs received by inputs wanted by region by beneficiary gender

		Input wanted								
	Input obtained	Got what wanted	23:21:0+S /Chitowe	Urea	Hybrid seeds	OPV seeds	Soya seed	G/Nuts seed	Beans seed	Pigeon pea
Total	23:21:0+S /Chitowe	99%	0%	1%	0%	0%	0%	0%	0%	0%
	Urea	97%	3%	0%	0%	0%	0%	0%	0%	0%
	Hybrid seeds	84%	1%	0%	13%*	1%	0%	0%	0%	0%
	OPV maize seeds	58%	0%	0%	40%	0%	2%	0%	0%	0%
	Soya seed	56%	0%	0%	0%	0%	0%	35%	9%	1%
	G/Nuts seed	94%	0%	0%	0%	0%	0%	2%	4%	0%
	Beans seed	85%	0%	0%	0%	0%	0%	15%	0%	0%
	Total	89%	1%	0%	6%	0%	0%	3%	1%	0%
Male	23:21:0+S /Chitowe	100%	0%	0%	0%	0%	0%	0%	0%	0%
	Urea	96%	3%	0%	0%	0%	0%	0%	0%	.0%
	Hybrid seeds	84%	1%	0%	13%*	1%	0%	0%	0%	0%
	OPV maize seeds	62%	0%	0%	38%	0%	0%	0%	0%	0%
	Soya seed	59%	0%	0%	0%	0%	0%	31%	11%	0%
	G/Nuts seed	94%	0%	0%	0%	0%	0%	0%	6%	0%
	Beans seed	81%	0%	0%	0%	0%	0%	19%	0%	0%
	Total	88%	1%	0%	6%	0%	0%	3%	1%	0%
Female	23:21:0+S /Chitowe	99%	0%	1%	0%	0%	0%	0%	0%	0%
	Urea	98%	2%	0%	0%	0%	0%	0%	0%	0%
	Hybrid seeds	84%	0%	0%	13%*	0%	0%	0%	0%	2%
	OPV maize seeds	40%	0%	0%	51%	0%	10%	0%	0%	0%
	Soya seed	53%	0%	0%	0%	0%	0%	39%	6%	0%
	G/Nuts seed	94%	0%	0%	0%	0%	0%	4%	2%	0%
	Beans seed	88%	0%	0%	0%	0%	0%	12%	0%	0%
	Total	89%	1%	0%	0%	5%	0%	0%	3%	1%

* Households who got hybrid seed but not the variety that they wanted