

# **Social Analysis of Malawi's Maize Marketing Reforms**

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## **ABBREVIATIONS AND ACRONYMS**

ADMARC	Agricultural Development and Marketing Corporation
EPA	Extension Planning Area
FBO	Faith Based Organization
GoM	Government of Malawi
IMF	International Monetary Fund
Kg	Kilogram
MK	Malawi Kwacha
MT	Metric Tones (1,000kg)
NFRA	National Food Reserve Agency
NGO	Non Governmental Organization
RATES	Regional Agricultural Trading Expansion Support Program
TA	Traditional Authority
WB	World Bank
WFP	World Food Program

# Social Analysis of Malawi's Maize Marketing Reforms

## 1. INTRODUCTION

The World Bank has undertaken a longstanding discussion with the Government of Malawi about strategies for improving the performance of national maize markets. This dialogue has centered on the role of the public and private sectors in providing market services, assuring maize supplies and promoting price stability.

Discussions early in the grain market reform process sought to define a space for the development of private sector marketing. Much of the recent discussion has concentrated on clarifying the role of the parastatal Agricultural Development and Marketing Corporation (ADMARC) within a post-reform maize marketing policy environment (World Bank, 2003; Nucifora, 2004; Chirwa, Mvula, and Kadzandira, 2005; Chirwa, 2007).

In 2002, The World Bank commissioned a Poverty and Social Impact Analysis of the impact of closing some ADMARC marketing operations on household welfare. ADMARC was under pressure, at the time, to reduce the breadth of its trading operations in order to reduce its financial losses. The study found that proximity to an ADMARC depot was correlated with an improvement in consumption levels, particularly in more remote areas (World Bank, 2003). These findings contributed toward the drafting of a Cabinet Paper on ADMARC reforms in 2006.

Under the terms of the reform proposals ADMARC was to divest itself of all but its core agricultural marketing operations. The company was expected to concentrate on providing marketing services in outlying areas of the country with limited private sector competition. Excess warehouse space in and around urban centers was to be passed on to a newly formed company called the Malawi Agricultural Warehousing and Trading Company (MAWTCO). This space would then be leased to the private sector.

This set of reform commitments was initially supported by the World Bank through the Fiscal Management and Accelerating Growth (FIMAG) program in 2004 and 2006. World Bank funding then supported the drafting of initial operationalization plans for implementing the Cabinet Paper proposals to reorient ADMARC and establish MAWTCO. The Poverty Reduction Strategy Credit (PRSC) for 2007 supported government efforts to “wind down non-core business interests held through AIHC”, and establish MAWTCO.

Despite extensive public discussions, the ADMARC reforms have remained controversial. Observers differ in their perceptions of the capacity of the private sector to provide competitive marketing services. There remains a widely held perception in Malawi that ADMARC should retain an important role in the maize marketing system due to nagging doubts about private sector capacity and behavior, in particular: (1) the capacity of the private sector to store sufficient quantities of grain throughout the season at reasonable margins to meet food needs during the lean season; (2) the willingness of traders to buy maize from smallholders in remote rural areas and deliver it to deficit areas at margins in line with marketing costs; and (3) the ability of the private sector to import sufficient maize during national production shortfalls to maintain prices at tolerable levels. Surrounding all of these concerns is the common perception that Malawian maize markets do not behave competitively, hence the need for direct state intervention (e.g., Chirwa, 2006; Chirwa, Mvula and Kadzandira, 2005).

Some argue that ADMARC must continue to compete with these traders in well established markets as well as in outlying areas. One model proposes that ADMARC should earn profits operating in areas with good market infrastructure in order to offset losses incurred in providing services to outlying areas. Worries about collusion amongst private traders culminated in the re-establishment of strict price and trade controls for maize in 2008.

This debate continues on the basis of remarkably little information about the impact of the liberalization on trade activity. There are no records available summarizing the level and directionality of major maize flows between producers, stockholders, processors and consumers. While farm-gate and retail price data are collected, the reporting of these data to key stakeholders is delayed. There has been little attempt to analyze recent price trends.

A social analysis of national maize market operations was proposed in order to provide a firmer basis for building a consensus about future options for strengthening these markets and their underlying institutional arrangements. The analysis summarized in this report lays out both the framework and results of the social analysis. First, the report summarizes what is known about how national maize markets work. This includes an inventory of available estimates of grain flows and stocks. Second, the analysis reviews the perceptions of the main participants in these markets, farmers and traders, about market performance. This includes a comparison of the operations of private traders and ADMARC. The combined set of evidence was discussed with key stakeholders in the reform debates – government, donors, traders, farmers, and civil society. The conclusions and recommendations in this paper highlight the results of these discussions.

## **2. DATA AND METHODS**

Three kinds of data was analyzed: (1) data and perceptions from interviews of farmers, traders (including relatively large traders, small traders in rural areas, small traders operating in large business centers), government actors, and others in the maize value chain; (2) monthly maize prices from the Ministry of Agriculture and Irrigation; and (3) household survey data.

### **2.1 Focus group discussions and key informant interviews:**

The field work took place in October 2008 and focused on the districts of Blantyre, Mulanje, Lilongwe, Dowa and Mchinji. In Blantyre the team visited Chilipa Extension Planning Area (EPA), Chanika, Lunzu, Kunthembe and Kanjedza trading centers. In Mulanje, emphasis was placed on Makokola EPA, Mulanje Boma, Chitakale Trading Center, and Chisinkha EPA. In Lilongwe, the team visited Nathenje/Kamphata, Kawale, Chinsapo, Area 49, and Chigwirizano markets. In Dowa District, visits were made to Madisi and Bowe EPAs. In Mchinji, the team visited Chiwosya EPA and Mchinji Boma. This makes a total of 18 different areas in the 5 districts. In addition, interviews were conducted with private traders and processors in Lilongwe and Blantyre cities.

The study areas were chosen to achieve variation in proximity to ADMARC depots. Six of the 18 areas were chosen to be isolated and far from ADMARC (over 20 km), while six others were taken to be within close vicinity of ADMARC depots/markets, and the remaining six to be moderately accessible. It is likely that farmers' perceptions and maize marketing behavior is influenced by their proximity to an ADMARC depot. In at least one of the study sites far from an ADMARC market, Makokola EPA, it was difficult for farmers to sell to ADMARC. In most other areas, whether far or close to an ADMARC market, rural infrastructure was considered reasonable enough to allow farmers to choose between ADMARC and private traders depending on the prices they offered, transport costs, and farmers' perceptions of the treatment they receive from each type of buyer.

Data were collected through participatory rural appraisal techniques/methods in which discussions were held with farmers and traders separately using a checklist of topics covering maize market options, prices, perceptions, storage, marketing costs and ban on maize trading. Interviews of ADMARC officials were also included in the field work.

### **2.2 Price data**

Monthly maize retail prices were obtained from the Ministry of Agriculture and Irrigation. The data were used to compute measures of price seasonality and instability, and trends in price levels over time. We also compare retail prices in town centers with price levels obtained by farmers according to interviews with them to compute spatial differences between farm-gate prices and retail prices in urban markets.

### **2.3 Household survey analysis**

Nationally representative household survey data is provided by the National Statistics Office (NSO), which implemented the 2004 Integrated Household Survey-2 (IHS-2) and the 2007 Agricultural Inputs Support Survey (AISS). The IHS-2 survey covers the 2002/03 crop season for about half of the sample, and the 2003/04 crop growing season for the other half. These two crop seasons correspond to the 2003/04 and 2004/05 marketing years. Over 10,000 smallholder households were included in this IHS-2 survey. A sub-set of 2,591 households were re-interviewed in the AISS survey, which was conducted in June 2007.

Therefore, the household survey data reported in this study covers a balanced panel of 2,591 households surveyed in both 2004 and in 2007.

### 3. ESTIMATION OF THE QUANTITY OF MAIZE MARKETED THROUGH VARIOUS CHANNELS

#### 3.1 Farm sector

Malawi's maize market is characterized by a high degree of differentiation at the level of the producer. Smallholder farmers account for over 90% of the maize production, while the estate sector accounts for less than 10%. Smallholder farmers who produce marketed maize vary dramatically in productive capacity. Within the smallholder sector, according to both the IHS-2 and AISS surveys, farm households fall into one of the following four categories with respect to grain markets, as shown in Table 1:

*i. sellers of staple grains:* Roughly 10 to 15 percent of the smallholder farms sell grain in a given year. The proportion of households selling maize was 14.3% in the 2007/08 marketing year, 18.5% in 2004/05 and 18.3% in 2003/04. According to Chirwa (2006), only 10% of smallholder households sold maize in 1997/98. Of course this figure will rise in good harvest years and fall in a drought year.

There are two sub-groups within this category of maize selling households: (i) a very small group of relatively commercialized smallholder farmers with 4 to 10 hectares of land, and (ii) a much larger group of smallholder farms (20 to 30 percent of the total rural farm population) selling much smaller quantities of grain, between 50 and 200 kgs per farm. The farmers prefer to sell at least part of their maize immediately after harvest (around April/May) because they wait for the whole year to receive their "paycheck" which is used to cover debts incurred over the farming season, pay school fees, etc. Better-off farmers with bigger surpluses to sell often reserve part of their sales for the October-November period to take advantage of seasonal price rises and to pay for the costs of fertilizer, land preparation, and other planting expenses which come at this time of year. Depending on location, the maize is sold to food insecure farmers, small-scale traders, medium-scale traders, large traders, processors and ADMARC. These households, especially the largest farmers, clearly benefit from higher grain prices.

*ii. buyers of staple maize:* these rural households made up roughly 56% of the rural population in 2007, which was considered a very good harvest year. Chirwa (2006) The proportion of households that purchase maize is therefore typically higher in most years. As shown in Table 1, maize-buying households are generally the poorest and have relatively small farm sizes and asset holdings. They are directly hurt by higher mean grain prices.

*iii. households buying and selling grain within the same year:* Roughly 7% to 10% of households both buy and sell maize. They comprise both relatively large farms that sell grain and buy back small quantities of processed meal, but are mostly relatively poor households that make distress sales of grain after harvest only to buy back larger later in the season. These farmers often sell their maize to meet immediate cash needs such as house construction, fertilizer, school fees, clothing, etc. but are forced to buy back later in the season when prices are generally higher.

*iv. households neither buying nor selling maize:* these households made up 29% of the smallholder population in the 2007/08.

**Table 1. Farm maize market position and wealth characteristics, 2007/08 marketing season.**

Household position in maize market 2007/08	% of total households in sample (n=2591)	Value of household assets (USD) 2007	
		mean	Median
Sold maize/did not buy (n=185)	7.1%	519.94	127.04
Bought maize and/or maize meal/did not sell (n=1461)	56.4%	211.77	42.04
Bought and sold – net seller (n=80)	3.1%	599.35	157.71
Bought and sold – net buyer (n=105)	4.1%	154.42	69.29
Bought and sold – net zero (n=9)	0.3%	348.18	45.64
Neither bought nor sold – autarkic (n=751)	29.0%	339.99	82.71
	100%		

Source: AISS household survey, 2007.

Maize sales tend to be highly concentrated among a relatively small number of farmers in the smallholder sector. Table 2 disaggregates smallholder households included in the nationally representative IHS-2 surveys into three groups: 1) the largest smallholder sellers of maize who accounted for 50% of the marketed maize output; 2) the remaining households that sold maize during the year who accounted for the other 50 percent of the marketed output, and 3) those households that sold no maize during the 12-month marketing season.

As shown in Table 2, one or two percent of the farms account for 50% of the overall marketed maize surplus from the smallholder sector. These farm households possess substantially higher levels of productive assets, crop income, and non-farm income, than the rest of the rural population. These relatively commercialized smallholder farmers had roughly 2 to 3 times as much land, 3 to 5 times more total annual income, 5-8 times more assets than the non-maize selling households, who constituted over 80% of the total.

We now estimate the amount of maize being sold by smallholder farmers in Malawi. Government of Malawi estimates of total smallholder maize production in the two years covered by the IHS-2 survey (2002/03 and 2003/04) and the AISS survey (2007) are presented in Table 3, column (a). The proportion of farmers selling maize and the proportion of total maize production that is sold is presented in columns (b) and (c), based on the national household surveys. By multiplying the figures in columns (a) and (c), we derived the estimated quantity of maize sold by farmers in the smallholder sector for these three harvest years. Note that each of these years happens to be considered a fairly good crop production season with favorable rainfall. The estimated quantity of maize sold by smallholder farmers – including sales to traders, other households, and ADMARC – is in the range of 240,000 to 460,000 tons.

Regarding maize sales from the estate sector, very few reliable estimates are available. However, a recent report estimated that estate sector maize sales are in the range of 150,000 tons.

**Table 2. Concentration of Maize Sales within the Smallholder Farm Sector**

	Category of farm household			Full sample
	Largest maize sellers accounting for 50% of total sales	Smaller maize sellers accounting for other 50% of total sales	Households not selling maize	
2002/03:				
Percentage of total households in sample (%)	1.2	17.1	81.7	100
Value of assets ('000 kw per hh)	215	28	24	27
Household income ('000 kw per hh)	169	81	51	59
Landholding size (hectares)	4.03	1.62	1.32	1.40
Kgs maize sold (kgs per hh)	3,682	231	0	84
2003/04:				
Percentage of total households in sample (%)	1.5	17.0	81.5	100
Value of assets ('000 kw per hh)	52	24	18	20
Household income ('000 kw per hh)	193	49	35	40
Landholding size (hectares)	2.34	1.40	1.08	1.15
Kgs maize sold (kgs per hh)	2,387	112	0	56

Source: IHS-2 survey conducted by NSO in 2004/05.

**Table 3. Estimates of quantities of maize marketed from production by Malawi's smallholder sector**

	Maize production estimate (tons)	% of farmers selling maize	Proportion of national maize harvest sold by farmers (%)	Estimated quantity of marketed maize from domestic production (tons)
Production year	(a)	(b)	(c)	(d=a*c)
2002/03	1,758,688	18.3	15.7	276,114
2003/04	1,733,125	18.5	13.8	239,171
2006/07	3,400,000	21.3	13.6	462,400

Sources: Ministry of Agriculture (column a); Integrated Household Survey-2 and Agricultural Inputs Support Survey, conducted by NSO (columns (b) and (c)). Note: the official 2006/07 maize production estimate may have been overestimated. If 2007 maize production were in the range of 2.8 million tons, then the estimated quantity of maize marketed from domestic production is estimated to have been closer to 380,000 tons.

Informal maize imports from Mozambique, Zambia, and Tanzania are the other major source of maize supplies in Malawi. According to FEWSNet (2008), informal maize inflows from these countries are as shown in Table 4:

**Table 4. Informal cross-border imports from neighboring countries, 2004/05/2008/09**

	Tanzania	Zambia	Mozambique	Total
----- metric tons -----				
2004/05*	2,656	2,157	71,229	76,206
2005/06	84,862	419	71,218	165,451
2006/07	1,888	378	77,394	79,525
2007/08	1,886	1,779	56,078	60,466
2008/09**				49,723

Notes: \*April of 2004 to March 2005. \*\*only includes the first 5 months of the 2008/09 season (April-August).

Source: FEWSNET 2008.

Informal exports from Malawi are reported by FEWSNet as being negligible.<sup>1</sup>

Based on the above information, we can now construct some basic estimates of national maize supplies circulating in Malawian markets. From Table 3, the quantity of maize marketed from domestic production is in the range of 250,000 to 450,000 tons from the smallholder sector, and perhaps 150,000 mt from the estate sector, depending on the quality of the weather and the amount of fertilizer used. Note that all of the years from which estimates are available in Table 3 were relatively good production years. Informal maize imports from Malawi's regional neighbors are estimated by FEWSNet to be in the range of 60,000 to 160,000 tons, again depending on the harvest. Imports tend to be relatively high in a drought year and relatively low in a good production season, although this of course also depends on the harvest situation in the neighboring countries, especially Mozambique and Tanzania. After adding supplies from marketed domestic production and imports, we estimate that the quantity of maize supplied in an average harvest year is roughly 475,000 tons, as shown in Table 5. This estimate includes household-to-household sales in the villages which never come onto markets as such. In a good production year, maize supplies may rise to 650,000 tons. In a moderate drought year, maize supplies may decline to 300,000 to 350,000 tons, depending on the quality of the harvest in neighboring countries, which determines cross-border import volumes. However, these figures do not account for storage losses on marketed quantities. After assuming a 10% shrinkage of marketed supplies,<sup>2</sup> we arrive at a rough estimate of national maize supply in an average, poor, and good harvest year.

**Table 5. Summary of total estimated maize supply from the smallholder and estate sectors, and informal imports.**

	Poor Harvest	Average harvest	Good Harvest
----- metric tons -----			
Supplies from smallholder production	100,000	250,000	400,000
Supplies from estate production	70,000	150,000	200,000
Supplies from informal imports	170,000	75,000	60,000
Total maize supply (before storage losses)	340,000	475,000	660,000
<b>Total maize supply (after assumed 10% storage loss on marketed supplies)</b>	<b>316,000</b>	<b>427,500</b>	<b>594,000</b>

<sup>1</sup> Several Malawian participants in the meeting to discuss the draft report indicated that they feel maize flows from Malawi to Zambia in 2008 have been quite substantial.

<sup>2</sup> See section 3.7 on storage losses.

Based on the interviews of grain traders and farmer focus group discussions, we computed the share of smallholders' maize sales according to the type of buyer, as reported in Table 6. These figures are unweighted averages of the responses obtained for the 2008/09 season (between April and October when the field work was carried out). The aggregate picture of the maize purchases through October 2008 shows that on average only 7.99% of the maize sold by farmers has been purchased by ADMARC. The bulk of it (about 92%) has been bought by private traders. ADMARC anticipated buying more early in the season but the rise in maize prices in 2008 led to temporary working capital shortages. ADMARC's biggest presence was in the Lilongwe and Blantyre areas, where it purchased roughly 17% and 14%, respectively, of the grain sold by farmers. ADMARC purchased very little in the other areas surveyed (Dowa, Mulanje, and Mchinji). It is estimated that 16.5% of the maize sold by farmers was direct farmer-to-consumer exchanges, typically within the same village. Small/medium traders purchased 29.1% of farmers' maize, while 45.2% was purchased by large traders directly from farmers. Large traders buy from farmers and small/medium-scale traders.

**Table 6. Estimated proportion of maize sold by farmers to different categories of traders**

Area	ADMARC (%)	Category of private buyer:			
		Total (%)	Farmer to household buyer (%)	Small Traders (%)	Medium/Large Traders (%)
Blantyre	14.38	84.62	38.08	46.54	0.00
Mulanje	0.00	100.00	19.90	34.70	45.39
Lilongwe	16.56	83.44	16.69	41.72	25.03
Dowa	5.00	95.00	0.90	1.00	88.10
Mchinji	4.00	96.00	7.00	21.57	67.43
<b>NATIONAL</b>	7.99	91.81	16.51	29.11	45.19

Source: farmer focus group discussions, October 2008.

The findings in this section lead to a few summary observations about the structure of maize production and markets in Malawi:

- A relatively small fraction of total maize production is marketed, especially in a drought year. Malawi's maize market can be characterized as being extremely thin, with minor changes in production leading to large changes in marketed supplies. This "thinness" is the result of farm structure, with a relatively small number of farmers in Malawi selling grain, and with the volumes they sell fluctuating with the harvest.
- These supply fluctuations contribute to high price instability due to an elasticity of demand for grain that is believed to be very inelastic. In a good year, marketed output rises while demand falls, putting downward pressure on prices. In a poor harvest year, marketed output shrinks while demand rises. This means that small changes in production generally lead to large price changes.

- A very small fraction of households account for most of the maize marketed from domestic production in Malawi.
- Most farm households do not sell maize, because of numerous constraints on production – inadequate landholding size to produce a surplus, little ability to afford fertilizer, sub-optimal use of available inputs due to limited knowledge, etc.
- Private buyers were the main buyer of maize from smallholders selling maize, accounting for roughly 75% of all maize sold. Intra-village sales accounted for 17% while ADMARC accounted for 8%.

### 3.2 Consumers

According to the Government of Malawi (1990), adults 10 years and above need 270kg of maize per year and children about 135kg per annum. While this may reflect “requirements”, actual maize consumption is much lower for most of the population. The Government of Malawi (2006) estimates that actual daily caloric intake is 2,366 kcal per person per day, and that roughly 45% of total caloric intake is from maize. Maize has 3578 calories per kg. From this, it is estimated that per capita consumption requirements are in the range of:

$$2,366 \text{ kcal/day} * 365 \text{ days/year} * 0.45 \div 3,578 = 108.6 \text{ kgs maize per person per year}$$

This relatively low number may reflect low purchasing power and under-nutrition among a large proportion of the Malawian population, as well as the potential for increased consumption of other staple foods in recent years, such as cassava, rice and wheat.

If it is assumed that maize accounts for more like 55% of total caloric intake, this would suggest that annual maize requirements are more in the range of 133 kgs maize per person.

Table 7 presents estimates of national maize purchases from available marketed supply. We include purchases of maize grain and maize meal by urban and rural consumers, and demand by brewers, the livestock and poultry industry, and producers of packaged maize meal. Table 7 disaggregates human maize purchases into rural vs. urban. Urban consumption estimates are based on the computations above, roughly 110 to 130kgs per person per year.<sup>3</sup> We also assume that consumption increases slightly in a good production year when prices are generally relatively low, reflecting a negative price elasticity of demand. Based on information from local sources, it is estimated that many urban households acquire about half of their maize from their own farms, relatives in rural areas and other intra-household transfers, indicating that only about 50% of urban consumers’ maize consumption is in the form of purchases from markets. Based on these parameters, it is estimated that the quantity of maize and maize meal purchased by urban consumers is in the range of 70,000 to 110,000 tons per year, depending on the season.

Key informant interviews of traders and others indicates that the demand for maize by brewers, livestock and poultry feeders, and maize millers is in the vicinity of 30,000 tons in a normal year, rising to 40,000 tons in a year of low maize prices, and 20,000 tons in a year of high prices.

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<sup>3</sup> If the goal of this exercise were to estimate “consumption requirements” rather than to estimate actual market flows based on effective demand, the national maize requirements would be substantially greater than shown in Table 7.

The percentage of the rural population purchasing maize and the amounts purchased are also shown in Table 7. The information needed to compute maize consumption is (a) the population in rural areas; (b) the proportion of the population purchasing maize in a given year; (c) mean kgs purchased per person per year. These estimates suggest that the quantity of maize purchased by rural households greatly exceeds that of urban areas, ranging from 150,000 in a good harvest year to 500,000 tons per year in a drought year.

**Table 7. Estimates of maize purchased from markets for human food consumption.**

	Poor harvest	Average harvest	Good harvest
<i>Rural:</i>			
Population (millions)	11.94 (88.5%)		
% of population purchasing maize	85%	65%	50%
Mean kgs purchased per person (among households purchasing)	50kg	40kg	25kg
Total maize purchases (tons per annum)	507,450	310,440	149,250
<i>Urban:</i>			
Population (millions)	1.55 (11.5%)		
% of urban maize consumption from market purchases	65%	50%	40%
Mean kgs purchased per person	100 – 110 kg	110-120 kg	120-130 kg
Total maize purchases (tons per annum)	100,750 – 110,825	85,250 – 93,000	74,400 – 80,600
Animal feed + brewer industry purchases (tons per annum)	20,000	30,000	40,000
<b>National quantity of maize purchased (tons):</b>	<b>628,200 – 638,275</b>	<b>425,690 – 433,440</b>	<b>263,650 – 269,850</b>
<b>National quantity of maize supplied, as per Table 5 (tons)</b>	<b>316,000</b>	<b>427,500</b>	<b>594,000</b>
<b>National maize surplus (deficit)</b>	<b>(312,200) - (322,275)</b>	<b>(5,940) - 1,810</b>	<b>324,150 – 330,350</b>

Sources:

- population: Malawi Government, 2006
- % of rural population purchasing maize (from 2007 AISS survey by NSO);
- estimate of urban population purchasing maize from key informant interviews.

Note that these figures presented in Table 7 are based on estimated consumption quantities, not consumption requirements. Estimated market purchases based on “recommended daily intake” would be substantially higher.

After subtracting the national quantity of maize purchased from the quantity of maize supplied (as shown in the second and third rows from the bottom of Table 7), we arrive at the estimated national maize surplus (deficit) as shown in the last row. As expected, the volumes in a normal year more or less cancel out, with a net balance of roughly zero after accounting for informal cross-border imports of roughly 70,000 tons. In a good production year, shown

in the last column of Table 7, Malawi is estimated to have a 300,000 to 350,000 ton exportable surplus. Again, it should be noted that this “surplus” is taking into account the fact that cross-border imports have continued to be imported into Malawi even during the last two relatively good production years of 2006/07 and 2007/08. By contrast, in a poor harvest year, as shown in the first column of figures in Table 7, the national maize deficit is roughly 300,000 to 325,000 tons, on top of informal imports. This shortfall represents the quantities that must be imported from South Africa or the world market in a poor harvest year.

## 4. ORGANIZATION AND BEHAVIOR OF MALAWI'S MAIZE MARKETING SYSTEM

Maize moves from a large and highly differentiated group of farmers through an equally diverse group of primary assemblers and transporters, before reaching the silos and warehouses of the major actors in the supply chain and eventually the consumer. A large proportion of grain goes through the marketing system without being handled by the large trading and processing firms. This includes both tied exchanges between farmers and consumers associated with *ganyu* labor as well as marketed maize that is handled by small- and medium-sized traders to small retailers and consumers. As such, there are many different transaction points within the chain, many of which overlap and feed into one another (see market flow diagram at the end of this section). What follows is a description of the actors in the chain, beginning with the stage linking producers to the market and ending with consumers, while also attempting to identify the factors motivating and constraining their actions.

### 4.1 Farmer marketing options

Rural regions within Malawi tend to center around **rural market areas**. These market areas may be highly developed, with permanent buying points, including **private assemblers** and **ADMARC**, which operate daily throughout the year. These markets may also have a specific market day, which attracts **mobile traders** (traders owning a truck) seeking to buy directly from farmers. These markets may also attract seasonal buyers who are acting as **agents for large trading companies**. In contrast, other rural regions are centered upon markets with set market days, which are open 1-3 days a week and attract itinerant maize traders and **local buyers** from around the region.

Activity within these markets varies seasonally and regionally. For example, in regions dominated by poor smallholders, such as Chisinka Village near Mulanje, farmers tend to market their maize early, with the hopes that other livelihood strategies, like *ganyu* labor, will support them through the lean season. Consequently, traders tend to focus their efforts in these regions early in the marketing season. Conversely, poor smallholders that grow both tobacco and maize, such as in Matziyada Village, Dowa District, are able to live off of the proceeds from tobacco immediately after harvest and therefore hold maize until later in the season. Larger surplus producers, like those found in Chioshsya, Mchinji District, sell maize within their local market to both local traders and company agents, at various stages of the year. Generally, they sell maize in July and then again just before the planting season (around November) to buy production inputs. Traders interviewed in high production rural market areas like Madisi and Bowe confirm that maize sales are highest early in the year, as poorer producers sell their stocks for cash needs, and later in the season as larger producers prepare for the coming farming season. Early sales are also important for farmers seeking to buy chemicals to treat their maize. Larger scale farmers, those marketing 200-300 bags of maize, can spend up to K35,000 on treatment chemicals. Some poorer respondents stated that they sold maize to **local buyers** and to **ADMARC** to avoid paying for treatment costs, with the expectation of buying that maize back later in the season. For them, the price differential they pay is the cost of storage.

At the **primary assembler level**, Malawi's maize market is characterized by a relatively high degree of competition, though there are significant regional differences, and a wide geographic scope. Recent efforts by the Government of Malawi to improve rural infrastructure has made many locations accessible throughout the year, while costs of transporting maize from rural areas to urban markets have probably been lowered considerably (analysis is underway to determine if this is reflected in spatial price spreads).

Based on our research, private maize traders do a good job of reaching even the more remote parts of Malawi. In all 18 areas where the field work was conducted, farmers were not able to provide accurate data on the numbers of traders that serviced farmers in their village; all respondents stated that “there were too many to count.” While farmers, particularly the poorest, complain about the prices they are offered early in the marketing season, none complained that they lacked a market. While some farmers complained that they were forced to take the price offered to them by a trader because there was no other local option at the time they wanted to sell, others within the same group seemed to be able to find a better market for their maize at the same time of the year as those who complained about a lack of options. This indicates that a particular farmer’s initiative and “savvy” plays a role in market access, suggesting some scope for training in farmer marketing skills.

Marketing options available for farmers vary based on their production levels and distance from either rural or urban markets. For farmers in more isolated regions, their primary marketing options are **mobile traders** who come to periodic regional markets and **traders with bicycles** who buy small quantities of maize. Hiring transport to take products to a market does not seem to be an option considered by most farmers. Farmers located closer to established rural market centers have a wider range of marketing options, including permanent **local buyers, agents for large trading companies, mobile buyers, and ADMARC.**

## 4.2 Trading firms

### *Small-scale traders*

The local maize assemblers were the main marketing option for smallholder farmers in all the sites visited during the study. These small-scale assemblers started buying maize in April. They go to the villages to purchase grain after harvest. Such traders either construct makeshift shades or hang their scales on a pair of poles to purchase maize from farmers. In certain situations, such traders move from farmer to farmer in search of grain. This saves the farmer the trouble of arranging transport to an organized market. However, the farmer may be at a disadvantage in bargaining unless he knows what other possible buyers would offer.

Each small-scale trader was able to buy 5-15MT from producing areas. Their purchased quantities are constrained primarily by their access to working capital, and by the size of the trucks they use and road quality (which determines the size of truck that can be used to assemble grain. Small trade volumes keep trading costs relatively high. Marketing costs could be reduced by better road infrastructure to accommodate larger trucks and by greater access to working capital. Most claim that their biggest obstacle is a lack of capital, which forces them to survive on small margins taken from the constant turnover of stocks. These traders rarely hold maize longer than it takes to find a market.

**Local buyers** located in rural markets like Chikuli, Bowe, Chioshya, and Bua buy and sell maize throughout the year. Their markets vary throughout the year. From June to November, they sell most of their maize to **mobile traders** who come to rural markets to buy maize for **large traders** and **processors**. This trade diminishes as the planting season approaches, which forces them to shift their focus to meet growing local demand. These traders buy maize from a variety of sources, including directly from **farmers** and **bicycle traders**. They deal in various volumes, from buckets to multiple bags depending on their economic strength. They will also buy maize from **large trading companies** or traders in surplus areas if local supplies diminish. As such, these local traders are considered to be a reliable source of maize by rural residents even in lean years and during lean seasons. All rural markets we visited

had at least one of these traders, while Bowe and Chioshya had up to eight. It was difficult to gauge the quantities of maize these traders would buy and sell throughout the year, but based on the current stocks they holding, most operated in the range of 50-300 bags of maize at a time. Storage did not seem to be a constraint for these traders, since most rural markets had several houses available for rent that were capable of holding up to 500 bags of maize. Many of these traders lack their own transport and are therefore dependent on mobile traders/transporters to link them with large-scale buyers in urban areas. The small-scale traders sell directly to consumers, ADMARC, medium-scale traders and large traders depending on situations and locations.

Small-scale traders' prices tended to be higher than ADMARC prices. In 2008, many small traders indicated that when they raised their prices ADMARC followed suit. In Chilipa EPA, the ADMARC price was MK30/kg when the traders were already buying at MK40/kg in May and MK60/kg in July and August. The larger traders by contrast indicated that ADMARC was the price leader and traders altered their prices in response to ADMARC. Still other traders felt that they did not have to match ADMARC's price in order to still get most of the surplus grain from farmers. This is because the traders paid cash promptly and were perceived by most farmers interviewed as being more honest with their weighing scales. As one trader from Lunzu market said "I don't fear buying in areas where ADMARC operates".

Some small-scale traders in the border districts of Mulanje and Mchinji also buy some maize from across the border to bring into Malawi. This is actually more common in Mulanje, which is located near a border trading center called Mpala in the town of Muloza. The small traders in Mulanje purchase two to three bags of maize per time and transport them to their warehouses using bicycles. The maize was bought from Mozambique at MK20/kg in February but the price later rose to MK60/kg from September to October. In fact, in October, 2008, traders interviewed in Mulanje said that maize was more expensive in Mozambique than in Malawi (3,000 MK per 50 kg in MZ and 2700 in Malawi).

#### *Medium-scale traders*

Medium-scale traders usually trader 500-2000 tons of maize per year and are often found in major trading centres such as Madisi or Bowe, Lunzu, Chitakale or Mchinji. Usually they are linked to small assemblers in the producing areas who act as their agents to buy maize from farmers. These traders buy maize from farmers and small scale traders until they have enough to fill a reasonably large truck or a mobile trader comes and offers an attractive price. The medium-scale traders sell to large traders such as ADMARC, Mulli Brothers, Rafik, NFRA, and processors such as Chibuku Products, and Rab Processors or animal feed manufacturers such as Central Poultry, Feltons, and Multifoods. Since medium-scale traders communicate regularly with the larger traders they know the prevailing maize prices at national level.

Medium scale traders are quite flexible in the geographic scope of their purchasing areas, often moving maize across districts from surplus to deficit areas. For example, a medium scale trader in Lunzu, Blantyre District sources maize from locations as diverse as Ncheu, Lililongwe, and Kasungu Districts. These medium-scale traders sometimes set up their own buying points to acquire maize directly from farmers but more frequently buy from small assemblers. This usually happens from May to October. However, these traders are always active in rural markets and they are always buying and selling maize, from both farmers and small-scale traders (bicycle traders).

The medium-scale traders have good access to transport and storage facilities. Some have their own transport while others rely on "mobile buyers" i.e., truckers who are contracted by larger warehouse and large trading companies to purchase from small/medium scale traders

in rural markets. Mobile traders (typically agents of the large trading companies) frequent rural markets and buy maize from medium-scale traders who are consolidating maize from farmers and bicycle traders. Maize collected by these traders will move immediately to warehouses or processing plants. During the course of the field work, we spoke with one transporter who was buying 10 tons of maize for Mulli Brothers, but was delivering it directly to ADMARC silos in Lilongwe. We also spoke to two private entrepreneurs who owned 8 trucks between the two of them. These trucks were used to move maize for their companies. These mobile traders serve as the primary link between rural market areas, serviced by local buyers, and national warehouses.

### *Large scale traders*

The big wholesale traders in Malawi include Mulli Brothers, Transglobe, Farmers World, RAB, Export Trading, and Rafik. These firms flourish because of their relatively high skills, know-how, connections, and access to relatively low-cost capital.

The large private traders get their maize from a variety of sources. In certain cases, the maize comes from medium scale traders and from neighboring countries particularly Mozambique and Zambia. These traders tend to have a good network of traders either medium or small-scale within Malawi and across the border who assist them in identifying available supplies and in bulking such supplies in economic lots for transportation to their warehouses. Sometimes the larger traders set up their own buying points in major producing areas to purchase maize directly from farmers. For example, in Mulanje, Mulli Brothers, Export Produce and Rafik bought maize directly from farmers from June to September. The large traders gave the farmers a price of MK25/kg in April and MK30-MK40/kg in June/July. The large traders often buy maize to meet contract requirements from the National Food Reserve Agency (NFRA), World Food Program (WFP), Non-Governmental Organizations, processors and institutions. A single contract for these traders is about 1,000MT. Large traders have good warehousing facilities, either rented or owned in Lilongwe, and Blantyre cities.

Some of these large traders have contracts with the Government of Malawi through National Food Reserve Agency (NFRA), and some international agencies such as World Food Program, other Non Governmental Organizations and Faith Based Organization (Kadale, 2007). Wholesalers after consolidating the maize, they clean it, and transport it directly to customer.

### *Changes in the number of maize traders over past 5 years*

The focus group discussions of smallholder farmers almost unanimously indicated that there has been a noticeable increase in the number of small traders buying maize in their villages. In some focus group discussions, farmers laughed at the question “how many traders buy maize in this village” because there were so many. Some people tried to “ballpark” the figure at 30-40 small traders, however, this number cannot be considered very reliable. In any case, there was a strong consensus among farmers that there were many traders from whom to choose to sell one’s maize. This doesn’t necessarily mean that farmers felt positively about the traders and the way they were treated, yet competition did not seem to be the problem.

In addition to farmers, we also asked traders about the changes in the number of traders operating in the market. We asked specifically about small, medium, and large scale traders. For all traders, millers, and stockfeeders interviewed, we asked them to indicate on a 1 to 5 scale how the number of marketing actors has changed over the past 5 years (1=substantial decline; 3=no change; 5=substantial increase). These participants indicated that there has been a major rise in the number of small-scale traders over the past 5 years (mean score of

4.7 over all market participants interviewed). The number of medium-scale traders was also perceived to have risen over the past 5 years (score of 4.2). By contrast, traders felt that the number of large-scale traders had actually declined slightly over the past 5 years (score of 2.8). The 2007 government tender for maize export appears to have contributed to a greater number of medium-scale traders in operation. Several traders interviewed indicated that they got into the business in 2007 to respond to the government's tender for maize contracts. However, a few of the firms entering in 2007 indicated that they were not seriously engaged in maize trading in 2008.

### **4.3 Maize processors and animal feeders**

The main processors and manufacturers mentioned by farmers and traders were food processors such as Rab Processors, Chibuku Products, and animal feed processors such as Central Poultry, Feltons and Multifoods. Rab Processors is engaged in both processing and trading of maize. They process maize into maize flour, and other products such as Likuni Phala. Bakarasa Milling in Blantyre works closely with Export Traders, who supplies grain for their milling operations. The processors obtain their requirements through the medium scale and large traders. Sometimes they buy directly from large-scale farmers who can supply economic loads to the processors. For cost-effectiveness and efficiency reasons, the processors often do not engage in setting up of their own buying points in the rural areas.

There are many hammermills operating in rural areas. It is common for small scale traders to be located near one of these hammermills to buy small quantities of maize from people who need cash to grind their maize. The hammermills also trade some maize, but according to traders not in very significant numbers.

### **4.4 Agricultural Development and Marketing Corporation (ADMARC)**

ADMARC has historically been a major player in Malawi's maize marketing system. Government has often used ADMARC to implement its smallholder-oriented pricing policies. According to farmers interviewed, ADMARC's role in the market has apparently declined in recent years, although data is not readily available to substantiate this. ADMARC's annual maize purchases and sales figures were last published in 2002; in recent years, such data is considered confidential. However, some substantiation of a decline in ADMARC's role can be surmised from the fact that ADMARC had approximately 350 depots spread throughout the country in 2002 (Kutengule, Nucifora and Zaman, 2006), while ADMARC staff interviewed in 2008 indicate that less than 70 depots were purchasing grain. However, any declining trend in ADMARC role was recently reversed in August 2008 when the Government announced a ban on private maize trade and re-established ADMARC as the exclusive legal buyer and seller of maize in Malawi.

In the 2008/09 market year, ADMARC started to purchase maize from farmers late in the season, around June in some areas, July in others.<sup>4</sup> Because a large percentage of maize is marketed immediately after harvest, farmers therefore sold their maize mainly to private traders. Moreover, farmers indicated that ADMARC offered slightly lower prices than private traders. For example, in Blantyre, farmers reported that when ADMARC was buying maize at MK30/kg private traders were already buying at MK60/kg in July/August. Farmers

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<sup>4</sup> As for the reasons why ADMARC tends to start buying several months after private traders, some interviews indicated that ADMARC waits till July when the grain is sufficiently dry to buy; others interviewed indicated that ADMARC was late in securing financing for purchasing maize.

felt the MK60/kg price from private traders was acceptable because it enabled them to make some profit on their investments in chemicals and fertilizer. For this reason, farmers in Chilipa area in Blantyre sold much of their maize to private traders before ADMARC opened their markets.

Farmers also indicated that ADMARC often runs out of money or stocks and this frustrates both farmers and consumers, and provides an opportunity for the private traders to consolidate their trading activities in areas hitherto dominated by ADMARC.

In the current season, ADMARC has bought approximately 70,000MT. All the maize ADMARC has bought was delivered to its own markets for sale to households. According to ADMARC, approximately 70% of its purchases have come from smallholder farmers, 20% from medium/small-scale traders and 5% each from large-scale traders and large farmers. However, this figure stands in opposition to the data collected during field visits with farmers. Very few farmers interviewed in the five districts covered in the study sold to ADMARC, while myriad small-medium scale traders mentioned that they were forced to sell maize to ADMARC when the trading ban made it illegal for them to sell their maize to other traders. Reports also indicate that one of the large-scale traders has negotiated an agreement with the government to continue operating despite the ban on private maize trade in order to buy maize from farmers and small traders in order to supply NFRA with maize. This would suggest that the majority of ADMARC's grain supplies in 2008 were directly or indirectly supplied by traders, not farmers. Hence, the field work conducted for this study seems to have uncovered some discrepancies about the major source of ADMARC supplies.

In the current season, ADMARC's sales have been mainly to household consumers, although institutional buyers such as schools and prisons have also purchased maize from ADMARC. ADMARC has so far sold 10% of its maize and has approximately 63,000 tons still to be sold before the 2009 harvest.

From 2006 to date, ADMARC's greatest difficulty is inadequate funds for buying grain. The rapid rise in maize prices in 2008 especially hurt ADMARC's ability to buy grain because their limited funds ran out quickly in light of the higher price paid, and hence ADMARC was not able to buy as much grain as they had intended through the first 4-5 months of the 2008 season. The price of maize went up before the ban because of competition from private traders. This increased the corporation's expenses in maize procurement. Consequently ADMARC needed more funds to purchase the same quantity of maize it bought in the previous season. ADMARC therefore desperately needs to get loans from banks to make funds available for buying crops from farmers.

Maize imported by private traders from neighboring countries has occurred every year since 2004 when a monitoring system was put in place, but the volumes have yet to exceed 200,000 tons. In years of major maize deficits, the Government tends to be the main importer of maize, generally from South Africa. When the government announces that it will import maize, this generally acts as a disincentive for wholesalers to engage in cross-border trade (RATES, 2003). This is because the government generally sells maize at below the cost of importation, hence undermining the price at which private traders would be able to sell.

**Table 8. Reported distances to buy inputs, time spent buying inputs, and costs for transport and miscellaneous expenses.**

	Distance to nearest ADMARC (km)		Distance to nearest private selling point (km)	
	mean	median	mean	median
Northern region	8	5	9	5
Central region	7	5	7	5
Southern Region	6	5	7	5
National	7	5	7	5

Source: AISS, 2007

#### 4.5. Retailers

A two-way flow of grain occurs between wholesalers and small traders. The first one was that of first assembler-wholesaler whereby small traders are categorized as first assemblers who, after buying maize from farmers, sell to medium traders who are known as wholesalers. Later in the season, and especially in poor harvest years when rural demand for grain is high, the larger traders sell maize to small retail traders who sell to consumers. Wholesalers have the capacity to store maize until late in the marketing season unlike first assemblers who just buy and sell due to limited capital and storage capacity. As such during lean period the former sells to the later who are in direct contact with the consumer. For example Mr. Kawana at Nathenje in Lilongwe does sell to small traders who sell to consumers at Nanjiri trading center. He also sells directly to consumers who come to his warehouses and shops.

##### *Interrelationship between retailers and consumers*

The last relationship observed on the maize trade flow in Malawi is that of retailer-consumer. These consumers are both small maize farmers (net buyers) and non-maize producers. The study has observed that the majority of buyers are grain-deficit rural households. Most of these farmers are the ones who sell maize very early in the season and by September most of them run out of food. Eventually they tend to concentrate on the market for home consumption. The other consumers are individuals who do not grow maize. These consumers are typically found in major cities and towns like Lunzu in Blantyre, and in some trading centers like Madisi in Dowa, Chitakale in Mulanje, and Buwa in Mchinji.

Urban consumers buy maize from ADMARC, from **small scale venders**, and directly from farmers/relatives in nearby rural areas. Urban consumers face the same constraints when dealing with ADMARC as their counterparts in rural areas. Buying from ADMARC can require standing in long queues, while there is no guarantee that the depot will have sufficient maize or that the measurement will be accurate. As such, many urban consumers buy from local venders, even though the price may be significantly higher. These **venders** can be differentiated based on size, volume, and business organization. Some venders contacted in Kawale market buy their maize directly from farmers and rural buyers for much of the year. They generally go directly to rural areas, buy maize, and then bring it to their small warehouses. Like rural buyers, these venders operate with limited capital and do not store maize longer than needed to find a market. They generally deal in volumes ranging from 50-300 bags. In markets like Kawale there were three such venders. These venders sell directly to consumers, small venders who sell into other urban markets, and large trading companies. They will also begin to buy maize from large private entrepreneurs when it becomes difficult to purchase maize in rural markets, around late December. Small venders who sell in markets

like Chisapo and Chigwirizono sell directly to urban consumers, and purchase maize either from farmers on the outskirts of Lilongwe, from larger wholesale vendors, such as those in Kawale, and large entrepreneurs.

#### 4.6 Storage

While seasonal price rises are sometimes viewed as evidence of hoarding and profiteering, seasonal price rises in fact play a socially valuable function in ensuring food security. The harvest comes only once a year, but humans must eat continuously throughout the year. Hence, storage from the harvest till the months directly preceding the new harvest is necessary. Storage involves costs, mainly the costs of fumigation and storage chemicals, rent on the storage facilities, and interest charges on the inventory, and the cost of security to guard the warehouse.<sup>5</sup> Hence, maize prices must rise throughout the season to compensate people for storing the commodity at harvest. An important question is how the rate at which prices rise through the year compares to actual storage costs. This question is beyond the scope of this study, but is addressed in a related report as part of the overall study.

During the interviews of traders, we asked about storage costs, and were given figures ranging from MK650/ton/month to MK1300/ton/month (USD4.60 to USD9.20 per month). Storage costs were relatively high in the urban areas of Lilongwe and Blantyre where rental costs were high.

Small traders are typically not in a position to store their own maize because this requires access to finance. Purchasing maize in bulk requires a loan, on which they must pay interest until they sell the maize and repay the loan. Hence, small traders tend to sell maize soon after they have bought it. Several exceptions were noted in Dowa but even there small traders stored only very small amounts for a month or two.

However, for medium traders, maize is stored for longer periods in anticipation that the price would rise more so than storage costs.

Table 9 shows monthly USD prices per ton in Lilongwe and the ratio of high to low price months, which amounts to the percentage increase over the season between high and low prices. There is great variability in this ratio, indicating high risks of storage. In the year when prices rose very dramatically (2001/02), this year was characterized by only a modest production shortfall, 8% below the country's 10-year mean. In September 2001, the grain trading parastatal, ADMARC, announced a fixed price for maize to be sold at its distribution centers and announced its intention to import maize from South Africa to defend this price (Rubey, 2004). Because ADMARC's selling price was considerably lower than the landed cost of importing maize, private traders had little incentive to import maize in this environment. However, the government imports arrived late and were not sufficient to meet demand. As a result, ADMARC depots began to experience stock-outs, and prices soared over \$450 per ton in early 2002. The major price run-up in 2007/08 was also due to a complex combination of policy decisions combined with a likely overestimate of maize production in 2007.

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<sup>5</sup> The cost of buying 100 tons of maize from farmers at MK30/kg is MK 3 million (US22,000). Hence, most traders generally must take out loans to buy grain in any significant scale. For every month the trader stores grain, it delays the time he/she can repay the loan and hence interest charges accumulate.

**Table 9. Monthly retail maize prices, Lilongwe (USD per metric tonne)**

Year	Month												# months between lo-hi price	ratio of hi/lo month price
	May	June	July	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr		
1994/95	96	104	116	111	92	67	71	95	103	103	91	69	-3	73%
1995/96	60	76	83	92	101	117	126	165	164	181	229	171	10	282%
1996/97	117	102	99	103	104	112	124	123	148	172	201	159	8	103%
1997/98	129	129	129	133	138	154	209	146	274	316	200	128	-2	147%
1998/99	103	110	117	96	118	183	200	212	235	263	163	103	6	174%
1999/00	104	101	107	104	121	112	140	140	130	163	164	107	9	62%
2000/01	74	42	61	71	70	58	83	80	94	100	104	83	9	148%
2001/02	71	81	98	222	290	269	275	338	515	496	400	182	8	625%
2002/03	160	170	185	151	150	153	170	231	160	213	216	180	3	54%
2003/04	99	109	98	84	87	92	80	81	96	141	186	186	4	133%
2004/05	165	150	165	150	244	150	161	168	170	159	167	159	3	63%
2005/06	155	164	192	162	164	242	272	267	266	269	405	267	10	161%
2006/07	148	149	147	151	156	152	176	180	180	161	146	136	-4	32%
2007/08	132	129	142	143	150	161	175	213	248	283	411	315	9	219%
2008/09	246	275	369	421	386	386								
<b>mean</b>	115	115	124	127	142	144	162	174	199	216	220	160	5	163%

Source: Ministry of Agriculture price reporting system. Note: 2008/09 prices not counted in mean monthly price computation.

### *Storage losses*

Storage losses were estimated from samples collected in the target districts. Collected samples were analyzed at Bunda College Seed Technology Laboratory. The analysis involved first determining the moisture content of the maize and using conversion factors to bring the weight of 100 seeds to their standard 12.5% moisture content weight. The estimated weight was compared to a standard weight of 28-40g for 100 seeds. The difference in weight computed as a percentage was used as a rough estimate of storage losses. Because the samples were taken during field work in October, the losses measured may underestimate the storage losses to be incurred over a full season. Moreover, the method used here does not account for physical storage losses due to rodents. However, since farm households continuously draw down their maize stocks over the season, the majority of their stocks will be consumed in the first few months after harvest. Relatively little or none of a household's stocks (in the case of households running out of their stocks prior to the next harvest) would be subjected to storage losses late in the season because there tends to be little maize left by that time. Many if not most rural households run out of grain stocks after a few months. Hence, the methods used in this report to determine storage losses may only slightly underestimate mean storage losses if at all, particularly for the majority of households who run out of their stocks mid-way through the season. Table 10 presents results of the mean estimated storage losses at the farm and at small-scale private trader levels.

**Table 10. Estimated mean percentage grain storage losses by district, 2008**

<b>District</b>	<b>Farmer Level (%)</b>	<b>Trader level (%)</b>
Blantyre	12.20	21.67
Mulanje	19.34	14.88
Dowa	8.66	9.67
Mchinji	14.53	12.16
Average	13.68	14.60
Overall average		<b>14.14</b>

The overall storage loss is about 14%. The highest levels were among Blantyre and Mulanje traders. Mulanje farmers also have the highest losses in the southern Region while Mchinji farmers and traders had higher losses in the Center. These storage losses are lower than those reported by the government (over 30% loss).

#### **4.7 The system: market channels and flows**

As maize moves from **rural markets** to **national warehouses** the number of actors contracts dramatically. While rural markets are characterized by a high degree of competition among buyers, the number of actors involved in warehousing and provisioning urban markets is remarkably small. This sector is dominated by the large trading companies, including Rab Brothers, Mulli Brothers, Transglobal, Export Trading, and Farmer’s World. Processing companies like Central Poultry and Chibuku Processing are also major actors in maize markets. In addition to these large companies, there are a handful of entrepreneurs who have the ability to buy and warehouse significant quantities of maize. I spoke with two of these buyers. One is currently holding 600 MT while the other has 1000 MT. Neither of these buyers could give me good figures on the number of entrepreneurs of a similar size operating in the market.

#### *Seasonality of market structure*

The importance of the various channels in Malawi’s maize marketing system changes according to the time of the season. These changes are driven by reliance on rain-fed agriculture, changes in market demand throughout the year, changes in prices, and costs of storage. Overall, the imposition of price bans and other regulations by the government this year made collecting data on the “normal” structure of Malawi’s maize extremely difficult. People have trouble describing their “normal” practices because there is so much variability and change in the markets, as well as production levels between years and within years.

Post-Harvest Maize Market (April and May): The maize harvest in Malawi begins in late April and continues through May. During this period of time producer prices for maize are at their lowest point of the year. These low prices are driven by a number of factors: First, most of Malawi’s maize is produced by rain-fed agriculture. As a result, the majority of maize in the country is harvested at the same time, leading to a sharp rise in supply. Second, the high moisture content of maize marketed soon after harvest drives down the price, because maize traders factor moisture shrinkage into their buying price. Third, many of the producers marketing maize at this time are doing so out of desperation, making them price takers rather

than price seekers. Fourth, there is no official floor price, because ADMARC does not become active in the market until June.

Most of the producers marketing maize during this period are doing so out of desperation. All maize producers understand that maize prices rise throughout the year. However, the need to repay debts incurred during the farming season, the need to pay school fees, and other social obligations force small scale maize producers to sell their maize early in the marketing season. Yet not all small scale producers are the same. Some producers have alternative crops, like tobacco, which provide them with income early in the harvest period, therefore allowing them to hold maize until prices appreciate. Additionally, some farmers produce significant surplus, which allows them to sell maize strategically throughout the year, releasing some early in the season and holding some to sell later as the farming season approaches.

The primary assemblers who are active during this period of time include: small scale traders on bicycles, local buyers in rural markets, mobile buyers coming from urban centers to buy in rural markets, and agents buying for large trading companies in rural markets. It is difficult to estimate the relative volumes of maize passing through each of these channels. Overall it seems that the quantities of maize being marketed by individual farmers is relatively small, since farmers who produce large surpluses hold these surpluses until prices rise later in the year. Thus, this period of time is characterized by numerous maize sales by a large number of producers, some of whom expect to buy maize back later in the season. These numerous, small sales are then assembled by these various buyers, who then sell their stocks to large scale traders and maize processors. No primary assemblers interviewed for this study stated that they hold maize to sell later in the year. Rather, these primary assemblers gain a margin by bulking maize that is sold in small quantities and then selling it on to large scale traders. Selling to large scale traders can either occur directly, whereby the primary assembler organizes his/her own transport or indirectly, whereby the assembler sells to a mobile buyer who buys from several primary assemblers until filling a truck. There are also a handful of private entrepreneurs, as well as large scale trading companies, who have their own buyers located in rural markets. Unlike the marketing structure later in the year, there is little or no local demand for maize during this time of the year. The majority of maize that is sold during this time period goes to large companies, though there is a handful of local small scale traders who buy small quantities of maize that they will sell back to rural people later in the year.

Overall there is a high level of competitiveness at both the primary assembler and wholesaler/large scale trader level during this time of the year. Some of this competition is driven by trading companies competing to acquire as much maize as possible before ADMARC sets a floor price in June. This seems to lead to a relatively quick appreciation in maize prices throughout this period. However, this is not a linear appreciation. Instead, a person's ability to negotiate prices with primary assemblers or their proximity to rural markets, where a number of primary assemblers operate side-by-side, leads to variations in producer prices. As a result, producers who sold maize in the same area at roughly the same time may receive significantly different prices for their maize (sometimes 5-10 kwacha per kg difference).

The market channels and structure of the market during this initial period of the marketing season is represented in Figure 1.

The entrance of ADMARC: June to August: The maize market in Malawi changes dramatically in June when ADMARC enters the market (Figure 2). According to traders, ADMARC's presence in the market has a significant affect on price, since traders must now compete with each other as well as the State to acquire maize. During this period of time

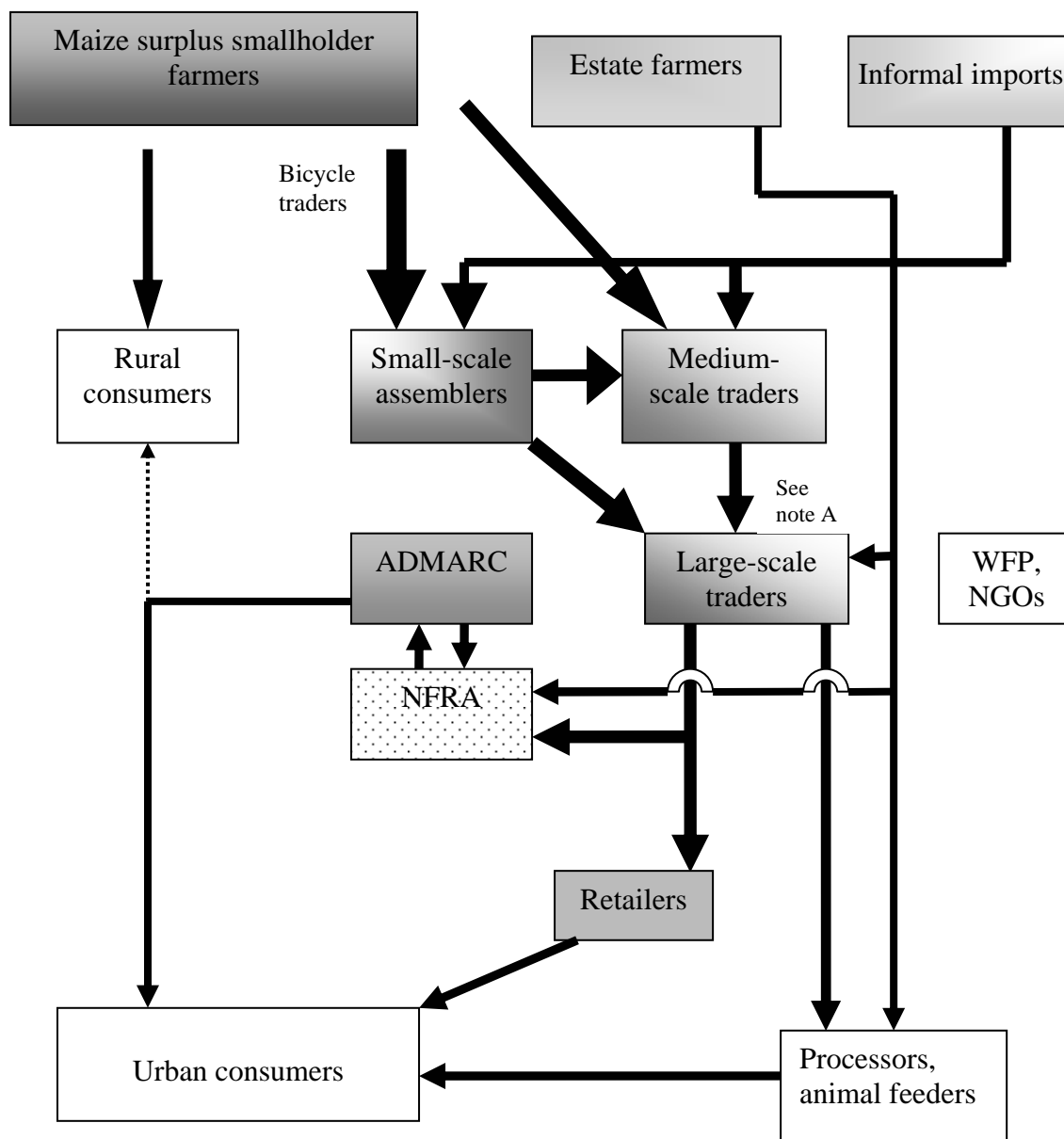
primary assemblers communicate with large scale traders, informing them of ADMARC's prices and activities. These primary assemblers are generally encouraged to offer farmers prices slightly higher than those offered by ADMARC. Farmers generally agree that traders offer them better prices than ADMARC. As a result of the competition between traders and ADMARC, prices tend to rise quickly during this period. It also appears that volumes of marketed maize increase early in this period, as farmers start to market larger surpluses, producer prices are higher, and cash generated from crops like tobacco dries up. The volumes of marketed maize may then taper off, because many surplus maize producers will hold maize off the market until the farming season approaches. Overall, the majority of maize marketed during this period goes through primary assemblers, who then sell to large wholesalers/traders, though a minority of producers will sell directly to ADMARC. The reason for this flow pattern is due in part to the price differential between private buyers and ADMARC, but equally important is the convenience of selling to a private buyer rather than to ADMARC. Private traders will often buy directly from the farmer's "doorstep" and always have cash to make purchases. Conversely, when selling to ADMARC farmers have to transport their maize to the depot, where they may find that the depot manager has run out of money to purchase maize. Of course the tendency for maize to flow into private channels may change depending on the year. There are times when ADMARC offers a better price than private buyers, which has the effect of redirecting maize into ADMARC warehouses. Because of ADMARC's limited reach, it is mostly primary assemblers, not farmers, who sell maize to ADMARC. However, due to their regular interactions with large scale maize buyers, these primary assemblers may be more price sensitive than many farmers, and generally have the luxury of being price seekers rather than price takers. Because of this structure, coupled with ADMARC's limited flexibility in buying price and the inconvenience associated with selling to them, the majority of maize acquired during this time is channeled from producers, through primary assemblers, to large scale traders. Again, the demand for maize by rural consumers is still relatively low during this period, meaning that most if not all maize is channeled out of rural regions.

Preparation for the farming season: September to November: This is the lead up to the farming season. Many larger scale maize producers have held significant quantities of maize off the market with the expectation that prices will be higher during this period than in previous periods, thus lowering the relative cost of inputs. During this period there is normally an up-swing in maize sales, as farmers prepare for the coming farming season. Again, the structure of the market is essentially the same. Farmers sell to primary assemblers, who then turn and sell to large scale traders and wholesalers, though some will sell to ADMARC if the price ADMARC offers is good or if large scale traders have scaled back their purchasing. Additionally, some warehouse scale back their purchases during this time, because they have stockpiled maize early in the season to sell during the lean period, and may run out of warehouse space by this time. This may translate into a shrinking market for primary assemblers. There is also an increase in local demand during this period, as more and more rural households run out of their own maize supplies. While much of this demand is met through farmer to farmer exchanges, some is met through purchases from primary assemblers.

Lean period December to March: Figure 3 shows the main market channels and flows during the hungry season of December to March. Most farmers have already marketed their maize by this time, though some do hold maize to use to hire piecework laborers to weed in their fields. Much of the country's maize demand is now met by large scale wholesalers, who have acquired maize throughout the year and release it on to the market through small scale vendors and wholesalers. Primary assemblers continue to purchase maize, though volumes from producers are tiny relative to other times of the year. To make up for any local shortfalls in maize, these primary assemblers travel to remote areas and border regions to acquire

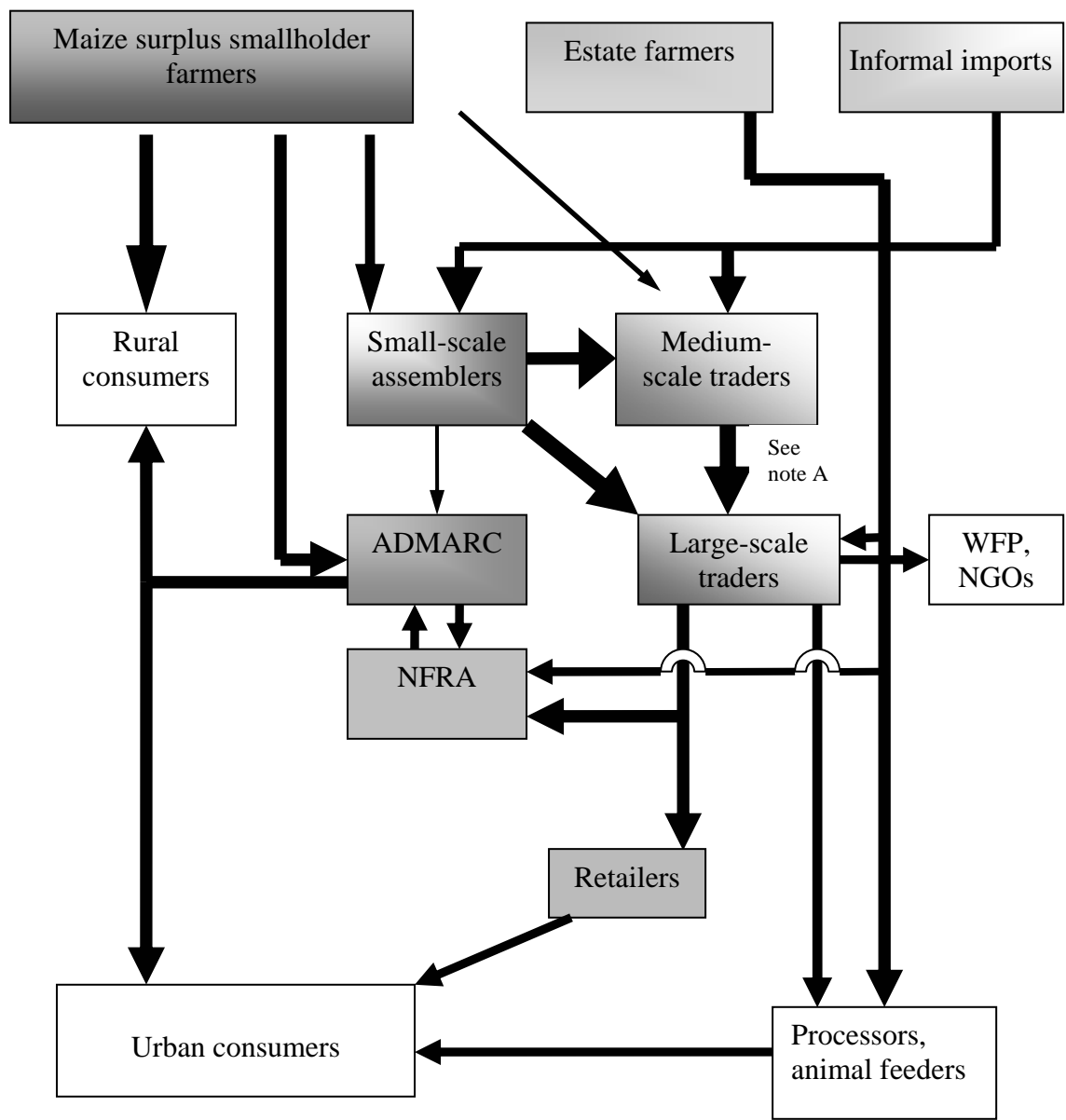
maize. Mozambique, Zambia and Tanzania were all mentioned as potential sources of maize during the lean season, as are regions with significant production on irrigated fields, like Mchinji and Dedza.

**Figure 1. Marketing Channel Diagram (Phase 1: April - May)**



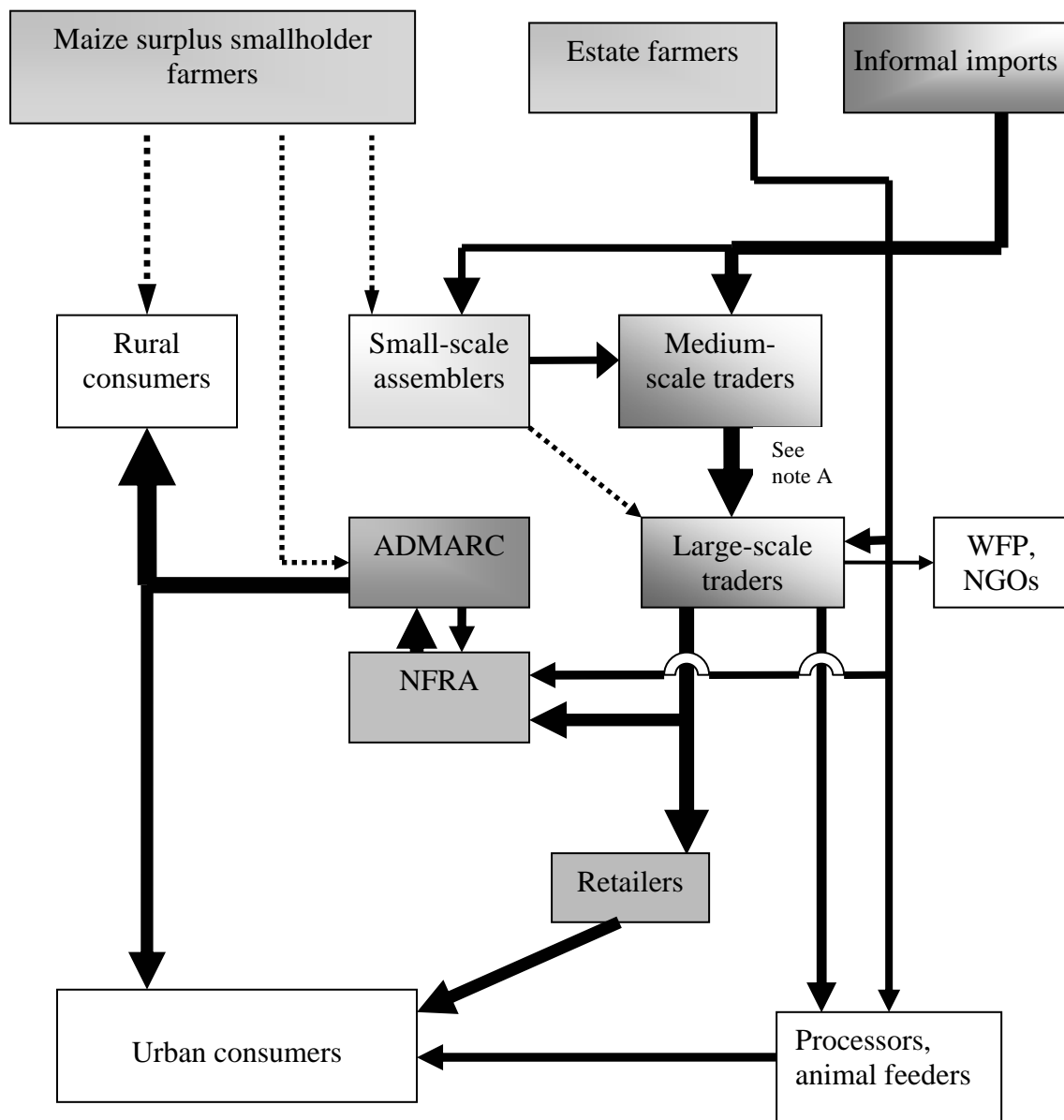
**Note:** the shaded boxes signify the main channels in terms of volume during this phase of the marketing season. The thickness of the arrow signifies the volume of flow. Dashed lines represent minor flows.  
**Note A:** transactions between medium-scale and large-scale traders are sometimes direct sale and sometimes through warehouse-transporters who buy as agents of the large-scale traders.

**Figure 2. Marketing Channel Diagram (Phase 2: July – October)**



**Note:** the shaded boxes signify the main channels in terms of volume during this phase of the marketing season. The thickness of the arrow signifies the volume of flow. Dashed lines represent minor flows.  
**Note A:** transactions between medium-scale and large-scale traders are sometimes direct sale and sometimes through warehouser-transporters who buy as agents of the large-scale traders.

**Figure 3. Marketing Channel Diagram (Phase 3: November – March)**



**Note:** the shaded boxes signify the main channels in terms of volume during this phase of the marketing season. The thickness of the arrow signifies the volume of flow. Dashed lines represent minor flows.  
**Note A:** transactions between medium-scale and large-scale traders are sometimes direct sale and sometimes through warehouser-transporters who buy as agents of the large-scale traders.

*Factors influencing the major trade channels and trade volumes:*

- Year-to-year production variability, driven by weather and changes in fertilizer use, driven by subsidy program
- Changes in market demand
- World market conditions – in 2008/09 led to aggressive buying early in year, implicitly driving prices up toward import parity early in the season
- Interest rates, which influence storage costs
- Access to capital on the part of small-medium scale traders
- Fuel and transport costs
- Infrastructure development: improvements in rural infrastructure have made more places accessible to private traders.
- ADMARC's access to adequate funds -- working capital situation
- Government policies toward regional trade and domestic trade

## **5. FARMERS' PERCEPTIONS OF TRADERS, ADMARC, AND THE 2008 TRADE BAN**

The following discussion summarizes some of the comments offered by farmers and commercial traders about market performance. These perceptions are obviously most influenced by problems of concern during the recent 2008 marketing season. Though some also reflect worries about persistent trading problems or risks. These perceptions provide a flavor of the factors influencing the sales and purchase decisions of these two groups of stakeholders.

### **5.1 Farmers' perception of ADMARC**

Farmers had a range of different perceptions about ADMARC. On the positive side, farmers had three positive things to say about ADMARC. First, farmers appreciated ADMARC and NFRA because it is their view that these agencies are the main storers of maize and other agricultural products for the hungry season.

Second, there was an appreciation that ADMARC's presence offered a source of competition with the private traders and hence was a way of ensuring that traders were less able to exploit them.

Third, farmers needing to buy maize could do so from ADMARC at lower prices than from private traders during times of food scarcity e.g. December to February. ADMARC is viewed as a government market where the price is known and the farmers are able to buy fertilizer and storage chemicals from ADMARC when the situation is normal. Farmers selling maize felt that they were doing their grain deficit neighbors a favor by selling to ADMARC, because ADMARC "keeps the grain in the area", whereas the perception is that traders ship grain out of the area.

On the negative side, farmers had perhaps five commonly expressed frustrations with ADMARC.

First, farmers agreed that ADMARC's role in smallholder crop marketing has diminished in recent years. We could not verify this by examining official government data on ADMARC maize purchases and sales because such data has not been published or available since 2002.

Second, farmers noted that ADMARC markets constantly run out of funds. This frustrates farmers because after harvest the farmers want a ready market to dispose of their products. Some farmers stated a preference to sell to ADMARC instead of private traders if ADMARC could pay cash promptly.

Third, farmers frequently complained about the behavior of ADMARC clerks. For example, farmers in Chilipa in Blantyre indicated that a bag that weighed 50kg at a private trader buying/selling point, weighed 40kg at an ADMARC market. When farmers run out of maize and want to buy from ADMARC, they also incur problems. According to farmers, ADMARC restricts the amount of maize the farmers/consumers need to buy while the same clerks sell truckloads to truck drivers. This also happens when ADMARC is selling fertilizer to farmers. It is alleged that sometimes ADMARC clerks ask farmers to pay MK200 on each bag of maize or fertilizer bought. Most farmers consider cheating and extortion by clerks to be serious and perennial problem with ADMARC.

Fourth, ADMARC currently has few clerks in their markets and therefore are unable to assist farmers to the fullest. One farmer groups indicated that ADMARC needs at least two managers and two clerks per station.

Fifth, ADMARC opens its markets late around July/August, yet farmers harvest crops in April/May. Farmers want ADMARC to open its markets in April/May immediately after harvest.

Farmers have a very ambiguous relationship with ADMARC. On the one hand, farmers view the institution of ADMARC as beneficial to small scale farmers. On the other, their experiences with ADMARC employees undermine their confidence in the institution. Overall, farmers stated that private traders offered higher prices than ADMARC, had greater geographic reach, began purchasing early in the season, and were more reliable in terms of having money to buy maize and having maize to sell in lean periods. Additionally, ADMARC is not seen to provide farmers with trustworthy scales, both when selling and buying maize. The principle advantage farmers identified for ADMARC relative to private traders is that selling maize to ADMARC keeps the maize in the area, while selling to private traders means that the maize will be shipped out. This perception of course does not coincide with reality, because ADMARC normally ships maize out of the region and also sells to local traders, while most people agree that local private traders do a good job of ensuring that there is maize to buy in rural markets, even during lean periods.

## **5.2 Farmers' perception of private traders**

First, farmers perceive that private traders are there to buy maize when the farmers are desperately in need of cash in April/May and ADMARC delays to open its markets. The private traders never run out of money and they pay cash on the spot.

Second, the traders offer better prices than ADMARC and there is often competition among the traders to buy as much maize as possible particularly at the start of the season.

However, farmers harbor many negative perceptions of private traders. First, some of them use unreliable weights and measures while others do not want farmers to see the reading on their scales. Some farmers stated that private traders, unlike ADMARC, buy maize from the villages and are never seen again in the same village during times of food shortage. Some farmers perceive that traders sell Malawian maize outside the country, which is considered to be "unpatriotic." However, some of these perceptions appear to be unfounded. First, most farmers described the existence of established rural markets and that medium-small scale maize traders have permanent buying and selling points and are considered reliable sources of maize throughout the year. This makes charges that "traders move grain out of the region" to be inconsistent with the view that maize is almost always available in rural markets. Secondly, FEWSNET's estimates of cross-border trade flows suggest very little informal maize exports from Malawi.

Second, in certain cases, private traders get produce from farmers on loan. At other times, private traders lie to farmer by arguing that produce prices have gone down. The aim is to persuade farmers to offer them a low price.

### 5.3 Farmers' perception of the maize trading ban

On August 21, 2008, the government issued a press release banning private maize trade in Malawi. The government later issued a clarification note in September stating that small traders buying and selling in village markets was legal as long as trade was carried out "in the periodical and traditional markets scattered in the villages across the country." Moreover, "the Ministry of Agriculture and Food Security is further asking all those involved in the buying and selling of maize in these daily operated markets to observe the Government set selling price of MK52 per kilogram..." Most large traders have interpreted this press release as constituting a *de facto* ban on their operations.

The farmers' perception on the maize ban was mixed and generally negative. Some farmers who had already sold their maize before August felt that they were unaffected by the trade ban. Among farmers who had yet to sell their maize by August, the main disadvantage of the ban has been that frequent charge that ADMARC has no money to buy and no maize to sell. Farmers are therefore unable to sell to or to buy maize from ADMARC even after waiting for several days or weeks. "Why restrict us to a market that has no money?" queried some farmers. There are always long lines at ADMARC markets.

Farmers who produce significant maize surpluses tend to sell their maize later in the year, in order to maximize their returns and to improve the ever important maize/fertilizer price ratio. This contrasts with less productive farmers who generally sell maize early in the marketing season. It is these productive farmers who are most negatively affected by the government's price regulations and trading ban. Decreasing the price of maize from 60 per kg to 45 translates into an increase from 4 bags of maize per bag of fertilizer to 6 bags of maize per bag of fertilizer. As such, the price regulations will lead directly to a decrease in inputs access for the upcoming farming season for the farming sector most able to produce surpluses of maize for the national market. As a result of these price interventions, maize production could actually be lower next year because many productive farmers will have less capital to invest in the coming farming season. Additionally, the interventions in the market act as a disincentive for these farmers to continue to invest in maize production. In fact, government interventions in maize markets creates an incentive for the most productive farmers in Malawi to cling to the production of crops like tobacco, which offers a more stable and transparent market than maize.

Maize farmers in surplus areas continue to hold significant maize stocks, which they had hoped to sell at a price above 60 kwacha. When the price regulations were imposed, many of these farmers were stuck holding maize stocks that decreased significantly in value. This is a group of farmers that is not dependent on fertilizer subsidies, but rather buys most of their fertilizer through private channels. It is anticipated that anywhere where there is a significant market for private sector fertilizer sales, there will be a large number of farmers still holding maize stocks that they hope to sell at a price higher than the 45 kwacha mandated by the government. These surplus producers do see a glimmer of hope in the maize market, since some small scale traders are now buying maize at around 50 per kg. However, large scale traders capable of buying 100 or more bags are still not very active in the market, and if they are, they are buying at 45. The only large scale buyer encountered in October 2008 buying maize was Mulli Brothers, who apparently has some sort of contract to buy maize for either ADMARC or NFRA.

#### **5.4 Private traders' perception of the marketing system**

There is competition among traders to buy as much maize as possible. This usually results in higher buying prices. The competition also takes place when selling maize to consumers. Traders focus on maize because it is easier to source large volumes in one spot, thus reducing search and transport costs. For beans and groundnuts, one incurs high search and transport costs as one needs to move to many different places to secure adequate amounts for cost-effectiveness in transportation.

Some traders felt that the ban on maize trading is fine because it would help small traders to sell and buy at similar prices as large traders, who sometimes undercut the smaller trader. Furthermore, the ban would help the small traders to buy at reasonable price from farmer and to sell the maize to consumers at affordable prices. The setting of prices helps traders to make informed decisions on how much to buy and sell as well as where to buy and sell.

Other traders felt that the ban on maize trading is bad for business and it shows government's ambivalence in its pricing policies. At one time traders are told that they are operating in a free/liberalized market and at other times the traders are restricted. This is not good for business. Frequent and unexpected changes in prices scare business people. Traders buy maize from distant places; incur transportation and storage costs, which shrink their margins. Traders should be allowed to set their own prices. Government should not set prices because this constrains the trading business. The maize ban made traders lose their money because they had already bought maize at a higher price and were told to sell at a lower price. If the ban is to control cross-border trade, government should use the police and the military to control that as opposed to restricting the prices in the domestic market.

Many traders felt that the trade ban is illogical because it restricts farmers ability to sell maize. They note that ADMARC is not buying from farmers due to lack of money. The government should allow some of the larger traders such as Mulli Brothers and Transglobe to operate in competition with ADMARC. Such traders have the financial muscle to assist farmers in the rural areas instead of relying on a corporation that is constantly without money. If government wants to set prices, such price bands should be announced much earlier in the season e.g. in April to allow business people plan properly. Such price bands should also be set in consultation with traders and farmers or their representatives.

Small scale traders buying maize in surplus areas have seen a drop off in maize purchases relative to the same time last year. In normal years, maize purchases in surplus regions pick up in September and October, as larger farmers release their inventories to buy inputs. This is not happening this year to the extent that it did last year because traders are not allowed to offer an attractive price to farmers. In fact, for many of these traders, their stocks of maize are shrinking as the number of local maize customers grows and purchases slacken.

When the trading ban and price regulations were imposed, a chain reaction was begun. First, the long-distance trade between surplus and deficit regions which these traders depend on dried up. Traders could not operate within the stipulated margin of 45 to 52 MK/kg (a 7 MK/kg margin), which was insufficient to cover inter-district transfer costs. The long-distance inter-district trade has dried up because of the price regulations, leading to a cash flow crisis. This cash flow crisis forced small traders to sell maize at a loss to ADMARC, since it was the only buyer capable of buying significant quantities of maize. As such, the price regulations essentially taxed small to medium scale traders, thereby allowing ADMARC to acquire their stocks at a low price.

Prior to the regulations, ADMARC was unable to purchase maize because of uncompetitive prices. With maize only trickling in, and more local consumers now buying maize, stocks held by these traders are diminishing. This means that these traders, who normally are the most effective providers of maize to rural consumers during the lean period, are more likely to lack maize stocks to service these markets and capital to acquire maize.

For wholesalers in urban centers like Lilongwe a couple things are happening as a result of price regulations. For large scale wholesalers, holding more than 500 tons of maize, they are unable to sell their maize to their usual customers, like processing companies and urban retailers, because they are holding maize that was purchased for more than the prices mandated by the government. Lacking cash and a market, these traders have essentially withdrawn from the market and are waiting for serious maize shortages to pressure the government to free up maize prices. For smaller scale wholesaler/retailers in Lilongwe, their business has become more difficult because of the price regulations. Instead of buying maize from traders in rural markets, which is a more efficient way of obtaining significant quantities of maize, they are forced to scour rural areas buying directly from farmers and smaller bicycle traders. This is because many rural market traders and urban wholesalers are operating within the same buying and selling ranges mandated by the government. As a result, an important link in the maize chain is damaged, as small scale urban traders have to compete directly from rural traders, rather than buying from them. This slows the movement of maize from rural to urban areas, since urban traders must now spend a lot of time in rural areas buying maize directly from farmers.

## **6. CONCLUSIONS AND IMPLICATIONS**

### **6.1 Assessment of Maize Market Performance**

1. Malawi's maize marketing system is complex and characterized by many alternative and competing channels. There are many different channels by which maize could flow from farmers to final consumers.
2. Shortages in markets and stock-outs at ADMARC markets, leading to huge price surges, are perhaps the greatest problem about maize markets in Malawi. This has happened at least three times since 2000. The years of large seasonal price hikes are generally due to poor coordination and consultation between the public and private sectors and unreliable crop production information. Regardless of the causes, the fact that maize prices have exceeded \$400 per ton in at least three years since 2000 indicates an urgent need to identify cost-effective strategies to ensure adequate grain supplies in local markets at tolerable prices. Several options are discussed in Section 6.3.
3. The evidence points to growing private investment and new entry in maize marketing in recent years; farmers in particular stated that they had many different options from which to choose to sell, and that the number of traders' buying grain from farmers in their villages were generally "too many to count."
4. There has been improvement in road infrastructure in recent years, and few if any farmers interviewed felt that they were cut off from markets.
5. Farmers' perceptions of both ADMARC and private traders were mixed. Both sets of traders were deemed to use unreliable weights and measures to cheat farmers. More farmers indicated that ADMARC staff were the worst, and that maize weighing 10kg on a private traders' scale would generally weigh less than 10kg on an ADMARC scale. Consumers wishing to buy grain commonly complained that they received less than what they paid for. Farmers also complained that ADMARC constantly runs out of money and that its personnel were very unprofessional in the way they dealt with farmers. Farmers felt that private traders have an increasingly important role in maize marketing and government needs to facilitate this role so that the private traders can complement the efforts of ADMARC, which currently has serious financial problems.
6. There remains little trust of private traders either, but this perception appears to be supported and even encouraged by many in government.
7. There were also mixed feelings on the maize price ban. Some farmers and small private traders felt that the maize price ban was good because it leveled the playing field. Other felt that it stifled their ability to invest in the upcoming farming season and that it went against the rhetoric of the government that "farming is a business." One farmer in Chioshya noted that "if the government wants farming to be a business, then why do they destroy our profits with their price ban."
8. Some large traders and farmers felt that the ban was bad for business and for maize marketing in the country. The ban demonstrates ambivalence to market liberalization on the part of the government; one day traders are told that the market is liberalized and the next the government steps in to control the prices. The current ban has led large traders to "hoard" the maize they bought earlier in the season arguing that selling such maize at the government regulated prices would lead to losses. The phrase "hoarding" is somewhat politically loaded

and vague as well, because it is not clear how hoarding differs from the act of buying maize after harvest in order to release it later in the season given that consumers need to eat during all months of the year. Some farmers are also continuing to hold maize because they believe that they would not recover the cost of production if the maize was sold at the government-controlled prices.

9. Storage losses: Although government has speculated that storage losses in 2007/08 may have been greater than 30%, our study estimated such losses to be about 14%. This compares to 12.9% by a Government of Malawi survey of grain storage losses conducted in 2005. Estimates further show that Malawi will need about 270,000MT of maize between October 2008 and March 2009. This is much higher than the 70,000MT ADMARC bought this year. However, considering that private traders are holding maize stocks and that NFRA has about 70,000MT, it is unlikely that the country would have a shortage of maize, assuming that the traders released their stocks.

10. There is great need for more accurate and reliable estimates of annual maize production. There is increasing speculation that the official government maize production forecasts in the past several years may have been overestimated. Reduced confidence in official crop forecasts creates difficulties in determining whether formal imports are required. Evidence of overestimated official crop estimates is that while national maize production estimates for the 2007 and 2008 harvests were both far above national consumption requirements, imports from Mozambique and Tanzania have been streaming into the country almost continuously since mid 2007, and prices in both years have reached levels previously seen only in years of severe food crises. According to FEWSNet, Malawi imported 59,000 tons of maize in the 2007/08 season through informal cross-border trade flows. In the first 5 months of the 2008/09 season alone, Malawi has imported over 49,000 tons of maize (FEWSNet, 2008).

These conclusions are generally consistent with Myers (2008), who used threshold autoregressive analysis to investigate whether spatial and temporal price patterns observed in Malawi retail maize markets are consistent with conditions required for efficient inter-regional trade and storage. The efficiency conditions were generally found to hold in the long-run, and short-run deviations from the efficiency conditions generally dissipated quickly (half-life of 1-3 weeks). These adjustment speeds compare favorably to maize and rice markets in other parts of Africa, and even to maize markets in the U.S. Myers' overall conclusion is that private sector maize markets in Malawi have worked quite well over the past decade as they have grown in economic importance. However, his analysis does find several possible exceptions to this general conclusion, e.g., inter-regional trade between Lilongwe and Mzuzu, and storage in Mzuzu and Nchalo, all of which display evidence of much longer adjustment periods than other trade routes and storage locations. In the case of inter-regional trade between Lilongwe and Mzuzu it could be that there is little direct trade between these locations because they are a long distance apart with multiple intermediate markets operating between them.

Despite Myers' finding that price patterns over time reflect efficient commercial storage, maize stockouts in Malawi stemming from poor harvests may still lead to widespread hardship and socially unacceptable hunger and malnutrition. A social safety net for dealing with these problems might have two main dimensions—a strategic grain reserve that makes additional public stocks available when a private stockout occurs during times of severe shortage; and a contingency plan for imports. Both of these safety nets would require treasury support and choosing the right combination is an important public policy issue. Furthermore, it is important to have transparent rules for managing the strategic grain reserve and a transparent set of contingent contracts in place for importing maize. Transparency and

predictability are necessary so that the private sector has incentives to continue their historically effective role in transporting and storing maize in Malawi.

## **6.2 Competitiveness of Maize Marketing Players**

The major conclusions of the report about competitiveness are as follows:

1. farmers say that they have many marketing options.
2. some farmers may complain about the price they receive, in all cases they had many different traders to which to sell. We found other farmers in the same village who received considerably higher prices selling about the same time of year. This suggests that there is scope for training farmers how to be more “market-savvy” and improve their negotiation skills.
3. Schultz's "efficient but poor" observation of low-resource farmers may also appropriately describe the functioning of Malawi's maize marketing system. Marketing margins may approximate costs, but these costs may be too high and unstable to encourage rapid private investment in the marketing system and promote on-farm productivity growth. So far, liberalization and privatization have replaced often unreliable, high-cost, and centralized forms of state marketing with private markets that are competitive but often lacking in information, infrastructure, and poorly integrated with other key activities. Smallholders do not have reliable access to forward markets in which a high level of trade occurs on standardized quality, quantity, and contract terms. Supply of credit to farmers is severely constrained by the absence of a clear mechanism for recovering loans in drought years. Financial market failures constrain the demand for productivity-enhancing inputs, which in turn limits private investment in durable input delivery systems especially in the more remote smallholder areas. In spite of tangible benefits to many consumers and farmers close to markets, food market reform has not by itself successfully addressed the problem of sustainably raising farm productivity growth for the millions of low-input semi-subsistence rural households in the country.

The challenge for the future is to design coordinated and sustainable systems of input delivery, farm finance, and reliable output markets to reduce the costs and risks of input intensification in smallholder agriculture.

## **6.3. What is the role of the public and private sectors in Malawi's maize marketing system?**

The essential policy question remains: what should be the role of the public versus private sector?

Current thinking has been to consider ADMARC as a residual buyer and seller, operating around a designated floor and ceiling price. This approach may be warranted as long as the margin between the floor and ceiling price is (a) wide enough to allow long-distance trade between surplus and deficit areas, and is (b) enough to cover seasonal storage costs so that the private trade will retain incentives to continue storing maize on its own. Achieving these objectives would require that ADMARC move away from pan-territorial and pan-seasonal pricing.

In areas where farmers have a lack of buyers at competitive prices, ADMARC can create more competition and force traders to offer more competitive prices. This has been the major rationale for the continuation of ADMARC. But our field work has not found any clear cut evidence that traders are reaping excess profits from either spatial or temporal arbitrage. We also found little evidence that farmers in the 18 sites studied (5 of them considered “remote”) were cut off from markets or dependent on one or two traders only. In fact, farmers in all villages surveyed cited many maize buyers in the April-October buying season. So, it is not clear whether ADMARC’s resources are best placed by focusing on purchasing maize directly from farmers.

c) NFRA can store strategic buffer stocks for release onto markets when price levels get too high. Adopting a “rules-based” approach to stockholding policy would require that the terms under which NFRA would acquire and release these stocks be transparent, known by all marketing actors, and that these rules would be closely adhered to. The same is true of import tariff rates and licensing of traders to engage in external trade.

Whatever involvement government wishes to retain in the maize market, predictable and transparent rules governing state involvement in the markets would reduce risks and enable greater coordination between private and public decisions in the market. The phenomenon of subsidized government intervention in the market, or the threat of it, leading to private sector inaction, is one of the greatest problems plaguing the food marketing systems in the region. Effective coordination between the private and public sector would require greater consultation and transparency with regard to changes in parastatal purchase and sale prices, import and export decisions, and stock release triggers. As stated by Oygard et al. (2003), “unless some very predictable and credible management rules can be established for the reserve, private agents will be reluctant to hold stocks, out of a fear that the reserve will be sold out at unpredictable times at subsidized prices, undercutting the value of their stored commodity.”

Private sector role: Try to support the Malawi agricultural commodity exchange to develop a transparent price discovery process and source of market information that is costless for all market participants.

Warehouse receipt system – this requires a building up of the marketing system more so than it currently is. Warehouse receipts are not an isolated service or function; rather they are a derived service which is based on a functioning and transparent exchange system that will drive the demand for warehouse receipt services (Business Growth Initiative, 2007).

#### **6.4. Potential recommendations:**

Some specific proposals for consideration would include:

1. Create a forum for regular consultation and coordination between the private and public sectors to manage the potential need for maize imports and exports. There is an urgent need for timely information on price movements, stock levels, and trade flows to serve as the basis for regular discussion between public and private sector stakeholders. Accurate information plus frequent communication is required for a coordinated private and public sector response to mitigate the chances of a food crisis. In the case of Zambia and possibly Malawi, there is an urgent need to critically assess the need for maize importation to avoid a food crisis in early 2009.

2. Invest in an improved crop production forecasting system to serve as a foundation for improved consultation and coordination between the public and private sectors. Currently, crop forecasting in much of the region is unreliable. There is mounting evidence that the national maize forecasts in Malawi may be overestimated, perhaps greatly. Unreliable crop estimates inject a great deal of guesswork into the food balance sheets that governments use to estimate import requirements and/or export potential, which in turn increases the probability of undershooting or overshooting import requirements and the wide price swings commonly associated with them. Relatively inexpensive investments in improved crop production estimates could greatly reduce the probability of future food crises.

### 3. REPO Contract:

The REPO contract allows the government to extend its grain reserves at short notice if needed. In practice, a premium is paid to assure private sector players hold a physical stock of grain for a stipulated period of time. At the end of this period, the government may either purchase this stock at a pre-arranged price (to supplement its stock held by the NFRA), or allow the stock to be sold on local or export markets by its private owners. In effect, the physical inventory remains in country and on call, if the government later requires this.

This transaction works best following a harvest with a grain surplus. The additional grain purchases underlying the REPO help establish a floor under farmgate prices. The REPO size and strike price, at which the government would exercise the option, signals to private traders when a market intervention is likely.

Two things are important for the success of this strategy. First the contract should be completed on a timely basis to assure it helps to life farmgate prices when these are most likely to be lowest – just after a favorable harvest. Second, the size and pricing of the transaction should be publicly known. Private traders then retain an incentive to buy, stock, and sell grain at price levels up to the designated strike price. And these actors know what size of inventory will be dropped on the market when the strike price is exceeded.

It may be worth noting that the government has considered implementing a REPO contract during both the 2007 and 2008 post-harvest period. If this deal had been completed in 2007, more stocks would have been available to offset the rise of prices in early 2008. If the REPO had been implemented shortly after the 2008 harvest, this could have helped support farmgate prices while improving the transparency of the government's stockholding strategy. Once the strike price rose above import parity prices, however, Malawi may have been better off considering a physical call option to import grain.

### 4. Call option:

If there is a strong prospect for the domestic price of maize to rise above import parity price levels (generally calculated based on the price of maize in South Africa plus transport costs), Malawi should consider negotiating a physical call option. This allows the country to import a given quantity of grain at an agreed price at some agreed date in the future. The payment of a premium creates the opportunity to make this purchase. If the domestic prices remain below import parity prices, the option may not be exercised. If domestic prices rise well above import parity, the import would logically be pursued. This sort of contract can be particularly valuable when regional grain prices and transport costs are rising – for example after a broad regional drought. Due to rising grain prices, Malawi is estimated to have saved US\$70 per ton of maize imported in 2005 under a call option. Since the contract was negotiated a bit late, domestic grain prices still rose to unprecedented levels. However, these prices might have increased even further if the call option had never been pursued.

5. Eliminate maize export bans, import tariff rates, and licensing requirements for trade with the region. These proposed changes will stabilize supplies within the region and benefit farmers and consumers in the long run. Tariffs and other trade policy instruments may still be appropriate vis a vis international markets. However, when food prices are abnormally high in the entire region, there appears to be little merit in maintaining barriers to importation. While trade bans do not stop trade across borders, they do increase the transaction costs associated with it, thereby inflating food prices for consumers and contributing to lower prices for farmers.

6. Focus government budgets on cost-reducing public investments to support the development of input and output markets and smallholder farm productivity. Many agricultural market failure problems in Africa reflect an under-provision of public goods investments to drive down the costs of marketing and contracting. Ameliorating market failure is likely to require increased commitment to investing in public goods (e.g., road, rail and port infrastructure, R&D, agricultural extension systems, market information systems) and institutional change to promote the functioning of market-oriented trading systems. Unfortunately the large share of government expenditures devoted to food and input marketing operations represents a high opportunity cost in terms of foregone public goods investments to promote the functioning of viable food markets.

Important public goods investments would include:

i) Human and financial resources dedicated towards seed varietal development, improved soil fertility management, and other crop management activities to raise smallholder farm productivity.

ii) Seed system development initiatives, based on either private sector leadership or public/private partnerships.

iii) Farmer extension programs: weak public programs to improve farmer knowledge and management practices are dragging down the potential for farm productivity growth in many countries in the region (World Bank 2007). The farmer focus group discussions highlighted some differences in farmers' marketing skills when it came to negotiating with traders and knowing when to sell. It is often NGO extension agents that interact with smallholder farmers to improve their crop husbandry and marketing practices and to raise the efficiency of their use of fertilizer, rather than the public sector extension service. The substantial variation in maize yields even within villages as commonly observed in household survey data attest to the productivity growth that could be achieved simply by raising the yields and fertilizer response rates of the bottom half of the farmers to match mean levels achieved in each village.

iii. Initiatives to organize farmers into viable groups for accessing seasonal loans to finance crop input purchase, obtaining support services (e.g., crop husbandry crop husbandry knowledge, marketing skills and techniques, soil testing for fine-tuning efficient fertilizer use recommendations), and achieving scale economies in crop marketing. Major progress in organizing grass-roots farmer groups to access knowledge, financing and inputs has been made in Kenya through the Kenya Market Development Programme, and the benefits being achieved there provide a blueprint for wider replication throughout the region.

iv) Public goods investments in physical infrastructure, e.g., roads, electrification, and port development.

v) Stable state institutions to support commerce and private investment. Providing a stable institutional environment is critical for private investment in communications, means of transport, storage, and other investments complementary to the public investments listed above.

While calls for increased investments in these areas are not new, their high payoffs have been well documented in the Asian green revolution experience (see Fan, Gulati, and Thorat, 2007) and continue to be major priorities for agricultural growth and food security in most of Africa.

## References

- Business Growth Initiative. 2007. Building a Warehouse Receipts Program that Works for All Stakeholders. Emerging Markets Group, Ltd., [www.BusinessGrowthInitiative.org](http://www.BusinessGrowthInitiative.org)
- Chilowa, W. 1991. "Liberalization of Agricultural Produce Marketing and Household Food Security in Malawi." Working Paper, Chr. Michelsen Institute, Fantoft, Norway.
- Chirwa, E. 2006. Commercialisation of Food Crops in Rural Malawi: Insights from the Household Survey. Working Paper 2006/04, Department of Economics, University of Malawi, Chancellors College, Zomba, Malawi. [http://www.economics.chanco.mw/papers/wp2006\\_04.pdf](http://www.economics.chanco.mw/papers/wp2006_04.pdf)
- Chirwa, E. 2007. Assessment of Alternative Maize Trade and Market Policy Interventions in Malawi, paper presented at the FAO workshop on "Staple Food Trade and Market Policy Options for Promoting Development in Eastern and Southern Africa", FAO Headquarters, Rome, Italy, March 1-2, 2007.
- Chirwa, E., P. Mvula, and J. Kadzandira. 2005. Agricultural Marketing Liberalisation and the Plight of the Poor in Malawi. Working Paper 2005/08, Dept. Economics, Univ. Malawi, Chancellors College, Zomba, Malawi. [http://www.economics.chanco.mw/papers/wp2005\\_08.pdf](http://www.economics.chanco.mw/papers/wp2005_08.pdf)
- Dorward, A., J. Kydd, J. Morrisson, and I. Urey, 2004. A Policy Agenda for Pro-Poor Agricultural Growth. *World Development* 32(1): 73-89.
- Fan, S., A. Gulati, and S. Thorat. 2007. Investment, Subsidies, and Pro-Poor Growth in Rural India. IFPRI Discussion Paper 00716, September. Washington, D.C.: IFPRI.
- FEWSNet, 2008. Informal Cross Border Food Trade in Southern Africa. Famine Early Warning Systems Network, July 2008.
- FEWSNet, 2008. Report on the joint field trip on post-harvest food security and maize marketing monitoring: 16th - 25th June, 2008, FEWSNet, WFP, Government of Malawi, and FAO, <http://www.fews.net/docs/Publications/Joint%20Trip%20report-%20Post-Harvest%20Food%20Security%20and%20Maize%20Marketing%20Monitoring%20June%202008.pdf>
- Galushko, V. 2003. "Has Spatial market Integration Increased over Time: The Evidence from the Ukrainian Food Markets?" MS Thesis. National University of Kyiv-Mohyla Academy.
- Goletti, F. and S. Babu. 1994. "Market liberalization and integration of maize markets in Malawi." International Food Policy Research Institute, Washington, DC, USA Bunda College of Agriculture, Lilongwe, Malawi. *Agricultural Economics* 11:311-324.
- Govindan, K. and M. Kherallah. 1997. "The Sequencing of Agricultural Market Reforms in Malawi: Mssd Discussion Paper, Market and Structural Studies Division; International Food Policy Research Institute; Washington, D.C. U.S.A.
- Harrigan, J., 2003. "U-Turns and Full Circles: Two Decades of Agricultural Reform in Malawi 1981-2000." *World Development*, 31: 847-863.
- Kadale Consult. 2007. The Maize Market (Madisi/Bowe EPAs). Concern Worldwide, Malawi Final Report.
- Kutengule, M., A. Nucifora, and H. Zaman, 2006. "Agricultural Development and Marketing Corporation Reform." In by A. Coudouel, S. Paternostro, and A.A. Dani, *Poverty and Social Impact Analysis of Reforms: Lessons and Examples from Implementation*. World Bank Publications.

- Malawi Government. 2006. Malawi Poverty and Vulnerability Assessment Investing in Our Future. Lilongwe. Jointly published as World Bank Report 36546-MW, Washington DC [http://www.agirn.org/documents/Malawi\\_PVA\\_Volume\\_I\\_II\\_Jun2006.pdf](http://www.agirn.org/documents/Malawi_PVA_Volume_I_II_Jun2006.pdf)
- Malawi Government. 2008. Impact and Output Indicators for Agriculture, Food Security, Nutrition and Natural Resources Projects/Programmes in Malawi. Lilongwe: Malawi Government.
- Malawi Government, Ministry of Agriculture and Food Security. 2008. 2007/08 Annual Agricultural Statistical Bulletin. Lilongwe: Planning Department.
- Mangisoni, J.H. 2008. Impact of treadle pump irrigation technology on smallholder poverty and food security in Malawi: A case study of Blantyre and Mchinji districts. Forthcoming. International Journal of Agricultural Sustainability.
- Myers. R. 2008. Efficiency of Inter-Regional Trade and Storage in Malawi Maize Markets. Report prepared for the World Bank, Lilongwe, Malawi.
- National Statistical Office. 1998. 1998 Malawi Population and Housing Census. Zomba: National Statistical Office.
- National Statistical Office. 2005. Integrated Household Survey 2004/05: Poverty Rates by District. Zomba: National Statistical Office.
- Nijhoff, J.J., D. Tschirley, T. Jayne, G. Tembo, P. Arlindo, B. Mwiinga, J. Shaffer, M. Weber, C. Donovan, and D. Boughton. 2003. Coordination for Long-term Food Security by Government, Private Sector and Donors: Issues and Challenges. Policy Synthesis No. 65. Michigan State University, Department of Agricultural Economics.
- Nucifora, A. 2004. "Lessons in Managing Policy Dialogue in Malawi: Reforming the Agricultural Development and Marketing Corporation (ADMARC)." The World Bank, Washington D.C.
- Office of the President and Cabinet, Department of Economic Planning and Development. 1990. Nutrition Facts for Malawian Families. Lilongwe: Inter-Ministerial Food and Nutrition Committee, Food Security Unit.
- Phiri, MAR. 2006. "Malawi Agriculture Commodity Exchange Baseline Survey." Bunda College of Agriculture, Lilongwe, Malawi.
- RATES (2003). "Maize Market Assessment and Baseline Study for Malawi", RATES Center, Nairobi, Kenya. Available at [rates@ratescenter.org](mailto:rates@ratescenter.org)
- Rubey, L. 2004. Do No Harm? How Well Intentioned Government Actions Exacerbate Food Insecurity: Two Case Studies from Malawi. Report, USAID/Malawi, Lilongwe.
- Shahidur, R. 2004. "Spatial Integration of Maize Markets in Post-Liberalized Uganda. International Food Policy Research Institute (71). Available at <http://www.ifpri.org>.
- Simler, K. R. 1997. "The Transition to a Market-Based Agricultural Economy in Malawi: A Multi-Market Analysis." Cornell Food and Nutrition Policy Program; New York. Cornell University Ithaca.
- World Bank, 2007. World Development Report. Washington, DC.
- World Bank. 2003. Reforming the Malawi Agricultural Development and Marketing Corporation (ADMARC): Synthesis Report of the Poverty and Social Impact Analysis, Report No.: 27512, Poverty Reduction and Economic Management, Africa Region, Washington, D.C.

## APPENDIX 1: TRANSPORT AND STORAGE COSTS

**Appendix Table 1: Storage Costs for Farmers and Small-Medium Traders on Monthly and Yearly Basis per 50kg Bag – *excluding financing costs***

AREA	Farmers						Small-Medium Traders					
	Rent (MK/Bag)		Chemicals (MK/Bag)		Total (MK/Bag)		Rent (MK/Bag)		Chemicals (MK/Bag)		Total (MK/Bag)	
	Monthly	Yearly	Monthly	Yearly	Monthly	Yearly	Monthly	Yearly	Monthly	Yearly	Monthly	Yearly
Blantyre	0.00	0.00	2.78	33.33	<b>2.78</b>	<b>33.33</b>	26.67	320.00	2.78	33.33	<b>29.44</b>	<b>353.33</b>
Mulanje	0.00	0.00	3.21	38.50	<b>3.21</b>	<b>38.50</b>	16.50	198.00	3.21	38.50	<b>19.71</b>	<b>236.50</b>
Dowa	0.00	0.00	2.30	27.55	<b>2.30</b>	<b>27.55</b>	12.45	149.43	2.30	27.55	<b>14.75</b>	<b>176.98</b>
Mchinji	0.00	0.00	2.38	28.60	<b>2.38</b>	<b>28.60</b>	13.90	166.82	2.38	28.60	<b>16.29</b>	<b>195.42</b>
Lilongwe	-	-	-	-	-	-	30.62	367.39	2.87	34.38	<b>33.48</b>	<b>401.78</b>

**Appendix Table 2: Storage Costs for Farmers and Small-Medium Traders on Monthly and Yearly Basis per Kilogram – *excluding financing costs***

AREA	Farmers						Small-Medium Traders					
	Rent (MK/kg)		Chemicals (MK/kg)		Total (MK/kg)		Rent (MK/kg)		Chemicals (MK/kg)		Total (MK/kg)	
	Monthly	Yearly	Monthly	Yearly	Monthly	Yearly	Monthly	Yearly	Monthly	Yearly	Monthly	Yearly
Blantyre	0.00	0.00	0.06	0.67	<b>0.06</b>	<b>0.67</b>	0.53	6.40	0.06	0.67	<b>0.59</b>	<b>7.07</b>
Mulanje	0.00	0.00	0.06	0.77	<b>0.06</b>	<b>0.77</b>	0.33	3.96	0.06	0.77	<b>0.39</b>	<b>4.73</b>
Dowa	0.00	0.00	0.05	0.55	<b>0.05</b>	<b>0.55</b>	0.25	2.99	0.05	0.55	<b>0.29</b>	<b>3.54</b>
Mchinji	0.00	0.00	0.05	0.57	<b>0.05</b>	<b>0.57</b>	0.28	3.34	0.05	0.57	<b>0.33</b>	<b>3.91</b>
Lilongwe	-	-	-	-	-	-	0.61	7.35	0.06	0.69	<b>0.67</b>	<b>8.04</b>

**Appendix Table 3: Gross Marketing Margin Analysis for Small-Medium Traders for the Period April to October 2008**

AREA		Average Selling Price (MK/kg)	Average Buying Price (MK/kg)	Gross Marketing Margin (MK/kg)	Average Cost/Month (MK/kg)			Net Marketing Margin (MK/kg)
					Transport	Storage	Total	
<b>BLANTYRE</b>	<b>Lunzu Area</b>							
	Close to ADMARC (Chanika Village)	59.00	50.00	<b>9.00</b>	1.20	0.59	1.79	<b>7.21</b>
	Far from ADMARC (Chilipa EPA)	59.00	43.75	<b>15.25</b>	2.50	0.59	3.09	<b>12.16</b>
	<b>Kunthembe Area</b>							
	Close to ADMARC (Kuthembwe EPA)	57.00	48.75	<b>08.25</b>	2.20	0.59	2.79	<b>5.46</b>
	Far from ADMARC (Kusena Village)	57.00	30.00	<b>27.00</b>	4.10	0.59	4.69	<b>22.31</b>
	<b>Blantyre Average</b>	58.00	43.13	<b>14.87</b>	2.50	0.59	3.09	<b>11.78</b>
<b>MULANJE</b>	<b>Chisinkha Area</b>							
	Close to ADMARC (Chisinkha Village)	55.00	37.50	<b>17.50</b>	0.10	0.39	0.49	<b>17.01</b>
	Far from ADMARC (Ndala Village)	55.00	33.75	<b>21.25</b>	0.40	0.39	0.79	<b>20.46</b>
	<b>Makokola Area</b>							
	Far from ADMARC	55.00	37.50	<b>17.50</b>	1.00	0.39	1.39	<b>16.11</b>
	<b>Mulanje Average</b>	55.00	36.25	<b>18.75</b>	0.50	0.39	0.89	<b>17.86</b>
<b>DOWA</b>	<b>Madisi Area</b>							
	Close to ADMARC (Madisi EPA)	54.00	41.00	<b>13.00</b>	0.50	0.29	0.79	<b>12.21</b>
	Far from ADMARC (Kabanga Village)	54.00	37.00	<b>17.00</b>	1.30	0.29	1.59	<b>15.41</b>
	<b>Bowe Area</b>							
	Close to ADMARC (Mwalala Village)	52.00	40.00	<b>12.00</b>	1.20	0.29	1.49	<b>10.51</b>
	Far from ADMARC (Madziyada Village)	52.00	36.00	<b>16.00</b>	2.30	0.29	2.59	<b>13.41</b>
	<b>Dowa Average</b>	53.00	38.50	<b>14.50</b>	1.33	0.29	1.62	<b>12.88</b>
<b>MCHINJI</b>	Close to ADMARC (Chiwosya EPA)	55.00	48.00	<b>7.00</b>	2.10	0.33	2.43	<b>4.57</b>
	Far from ADMARC (Mphanga Village)	55.00	45.00	<b>10.00</b>	3.90	0.33	4.23	<b>5.77</b>
	<b>Mchinji Average</b>	55.00	46.50	<b>8.50</b>	3.00	0.33	3.33	<b>5.17</b>