Analysis of the Effects of Maize Trade Restrictions in the COMESA Region on Food Prices and Market Development

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Table of Contents

Table of Contents .................................................................................................................................................. 2

List of Tables.......................................................................................................................................................... 3

List of Figures......................................................................................................................................................... 3

1.0 BACKGROUND: REGULATORY ENVIRONMENT FOR MAIZE TRADE IN COMESA REGION
............................................................................................................................................................................4

2.0 STATUS OF TRADE............................................................................................................................................... 4

3.0 PRICE EFFECTS OF TRADE RESTRICTIONS ..................................................................................................... 7

  3.1 Price Variability .............................................................................................................................................. 7

  3.2 The Effects of Trade Restrictions on Consumer and Producer Prices .......................................................... 8

  3.3 Lessons from Zambia’s Response to Deficit and Surplus Harvests ............................................................... 9

  3.4 Lessons from Kenya’s Response to the 2008/09 Global Food Price Spike .................................................. 11

  3.5 Lessons Learned from Malawi’s Response to an Anticipated Deficit ......................................................... 12

  3.6 Lessons Learned from Mozambique ............................................................................................................ 12

  3.7 Welfare and price effects of export restrictions in Tanzania ........................................................................ 12

  3.8 Modelling Price Levels With and Without Trade ............................................................................................ 13

4.0 MARKET DEVELOPMENT EFFECTS OF TRADE RESTRICTIONS .............................................................. 14

  4.1 Costs of Trade Restrictions to the Public Sector ......................................................................................... 14

  4.2 Enabling Informal Markets ............................................................................................................................ 15

  4.3 Effects of Trade Restrictions on Private Sector Investment ........................................................................ 17

5.0 CONCLUSIONS AND RECOMMENDATIONS ................................................................................................ 18
REFERENCES ....................................................................................................................................................... 20

List of Tables

Table 1: Summary of major importers and exporters of maize in the COMESA region ........... 6
Table 2: Imposition of export bans against monthly retail mealie meal prices....................... 10
Table 3: Trade Policy Impact on Maize Prices in Zambia......................................................... 13
Table 4: Value of Foregone Foreign Exchange and Tariff Revenue as a Result of Limited
Maize Exports 2008/09-2012/13 ................................................................................................. 15

List of Figures

Figure 1: Net maize imports and total production in the COMESA region, 2000 – 2012.................................................................................................................................................. 5
Figure 2: Total maize imports into COMESA of Top 5 importing countries COMESA region 2000-2012.................................................................................................................................................. 6
Figure 3: Unconditional Coefficients for Maize Prices 1994-2009............................................ 8
Figure 4: Trends in Import Parity and Domestic Prices for White Maize.................................. 9
Figure 5: Zambia’s maize export parity, import parity (South Africa) and Lusaka prices .... 10
Figure 6: Nairobi Local and Import Parity Prices, January 2006 - August 2009..................... 12
Figure 7: Observed Malawi Informal Maize Import Trends (MT)............................................ 16
1.0 BACKGROUND: REGULATORY ENVIRONMENT FOR MAIZE TRADE IN COMESA REGION

The COMESA region brings together 19 member states and is the biggest regional economic bloc in Africa. Through regional integration a host of benefits are anticipated to accrue to member state, namely enhanced economic growth and development opportunities. This anticipated growth is predicated on the assumption that regional integration will help member states to overcome the challenges faced by small and segmented individual economies in attracting meaningful investment. Through the creation of a larger single market, COMESA seeks to enhance competitiveness and trigger production in all the integrating countries.

The COMESA regional integration agenda is guided by trade liberalization through elimination of tariff and NTBs. In this regard, COMESA attained the FTA status in October 2000 in which originating goods are traded on a quota-free and duty-free basis. Article 49 of the COMESA Treaty calls upon members states to remove all existing NTBs to intra-regional trade and desist from introducing new ones. Further, Article 50 of the Treaty provides for instances where a Member State may after giving notice to the Secretary General to introduce or continue to execute restrictions or prohibitions. Acceptable reasons for limiting trade under Article 50 include:

- The protection of human, animal or plant life, or the protection of public morality
- The maintenance of food security in the event of war and famine

In addition, Article 50:2 states that a Member State shall not so exercise the right to introduce or continue to execute the restrictions or prohibitions conferred by this Article as to stultify trade and the free movement of goods envisaged in this chapter.

Similarly, Article 50:3 provides that such a measure when invoked, should only last to serve the purpose for which it was intended and should not last for more than is necessary to achieve the security aims and other risks intended to be eliminated and shall be on the basis of non-discrimination.

2.0 STATUS OF TRADE AND PRODUCTION

Despite the agreeing to the free-trade articles under treaty, and the agreement by member states in 2005 to adopt a “maize without borders policy,” regional trade integration for maize remains hampered by the tendency of countries with large numbers of maize producers to tightly regulate maize trade. These regulations include import and export permits and tariffs, quotas, trade bans, and inconsistent implementation of SPS regulations, including GMO prohibitions. More importantly, the application of trade restrictions on maize are frequently implemented in an unpredictable and ad hoc manner, leading to high levels of uncertainty among private sector actors and an inability to develop long-term, reliable trading relationships between surplus and deficit countries and regions.
For many countries in the COMESA region white maize serves as both the national staple food and the primary crop grown by smallholders. It, therefore, plays a central role in the region’s strategy for promoting economic growth, reducing poverty, and improving food security. In the COMESA region, approximately 13 million hectares of land are devoted to maize production annually. Yet, yields across the region remain low. On average COMESA member state countries achieve maize yields of only 2 metric tonnes per hectare, compared to feasible yields of 5 metric tonnes per hectare. This low productivity contributes to a situation where overall production of maize remains well below total regional demand. As shown in Figure 1, while total maize production in the region has risen substantially since 2000, maize imports have expanded at an even faster pace. As of 2012, the region imported over 2.5 million metric tonnes of maize at a cost of over $500 million.

Figure 2: Net maize imports and total production in the COMESA region, 2000 - 2012

As shown in Table 1, the majority of the maize imports are accounted for by five countries. However, very few countries in the region are net exporters of maize. In fact, over the period 2005-2011 only one COMESA member country, Uganda, was a consistent net exporter of maize, while Zambia and Malawi were net exporters in most years. Indeed, Uganda is the only member state with large numbers of maize producers that does not routinely intervene in maize trade. Instead, it allows its maize to be freely traded into surrounding markets in Kenya and South Sudan, thereby allowing its farmers to capture higher farm gate prices than would be the case if they could only sell into the domestic market. However, the average exports from these three countries represent only a fraction of the total import demand from the major importing countries.
Table 1: Summary of major importers and exporters of maize in the COMESA region

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Largest Importers</strong></td>
<td>Egypt, Zimbabwe, Kenya,</td>
<td>2,237,017</td>
</tr>
<tr>
<td></td>
<td>Swaziland, DRC</td>
<td></td>
</tr>
<tr>
<td><strong>Periodic net exporter</strong></td>
<td>Zambia, Malawi</td>
<td>78,602</td>
</tr>
<tr>
<td><strong>Consistent net exporter</strong></td>
<td>Uganda</td>
<td>45,141</td>
</tr>
</tbody>
</table>

Source: COMSTAT

As a result, the vast majority of maize imports into the COMESA region come from outside the region, and indeed from outside the continent of Africa. According to the FAO (2006), of the $3.7 billion of cereal imports in sub-Saharan Africa, only 5% were produced by African farmers. As shown in Figure 2, the majority of imports into the COMESA region come from major agricultural economies, including the United States, Argentina, Ukraine, South Africa, and Brazil.

**Figure 2: Total maize imports into COMESA of Top 5 importing countries COMESA region 2000-2012**

Source: COMSTAT

The reliance of the COMESA region on maize imports from outside of the region and the continent reflects the broader challenges of low productivity of smallholder agriculture,
high transactions costs for moving cereals within the continent, and the tendency of major cereal producing countries in the region to tightly regulate food trade. Low yields and high food import bills present both a challenge and an opportunity for the COMESA region. The question facing policy makers in the region is, therefore, how to utilize scarce public resources to effectively link maize producers to consumers in the COMESA region in ways that encourage agricultural-led growth, promote more stable and lower average food prices, and effectively enable smallholders to raise yields.

Despite the frequency with which trade restrictions are imposed by maize producing countries in the region, important questions remain about their effectiveness in achieving short-term supply and price objectives, and, more importantly, the long-term poverty reduction and growth needs in the region. This paper summarizes existing data from the region on the effects of trade restrictions on maize. It examines these effects in two ways: 1) the price effects, for producers and consumers, and 2) the market development effects, including the effects on investment and revenue generation for farmers, the private sector, and member states. Based on this summary of results, the paper offers a menu of possible recommendations for policy makers to explore and adapt to their specific needs. It is important to note that for countries with substantial numbers of poor people, as is the case in most of the region, the debate is not about whether or not states should seek to manage food prices, but rather how to most effectively do this to achieve short-term price and supply goals as well as long-term economic growth and poverty reduction objectives.

3.0 PRICE EFFECTS OF TRADE RESTRICTIONS

3.1 Price Variability

Different segments of the population have different objectives in terms of food prices. For surplus producers, higher food prices enable income growth and provide the means and incentives to invest in crop production and intensification. Conversely, for consumers, which in much of the region include the majority of the rural population (Poulton et al 2006), lower food prices can enable greater economic access to food and frees up disposable income to be used for non-consumption purposes. Policy makers in the region must therefore navigate these competing food price demands in ways that minimize unnecessarily high food price spikes, while at the same time not dampening the incentives for surplus producers. Of course variations in food prices are important, both across space and time, as they encourage investments in storage and trade. Thus, the issue is not so much attempting to eliminate price variations as it is ensuring that price variability is not excessive and unpredictable, as this can be extremely damaging for consumers and producers (Rashid and Minot 2010).

How effective are trade regulations at improving the stability of food prices within a country? Chapoto and Jayne (2009) provide a comparison of the degree of maize price variability across countries. They find that markets that are more integrated into world and
regional markets experience significantly less maize price variability than countries that routinely intervene in domestic maize markets and cross border maize trade. As shown in Figure 3, markets in Malawi and Zambia, where trade restrictions and active marketing boards characterize domestic maize markets, exhibit significantly higher levels of price variability than markets in Kenya, South Africa, and Mozambique, where the role of the government in price and trade controls is more limited.

Figure 3: Unconditional Coefficients for Maize Prices 1994-2009

Similarly, a study by the International Food Policy Research Institute (IFPRI), found that maize price volatility is significantly higher in countries that actively intervene in their maize markets than it is in countries that make little or no effort to manage prices. Maize prices in Malawi, Zambia, and Zimbabwe, which have large state-owned trading enterprises that buy and sell maize and other staples in an attempt to stabilize prices, experience food price movements that are more than 50 percent more volatile than in countries that do not have entities engaged in maize trade (Minot, 2013).

3.2 The Effects of Trade Restrictions on Consumer and Producer Prices

What are the implications of this price variability on consumers and producers? One way to explore this question is to examine the relationship between domestic prices relative to import and export parity prices. Under conditions of open borders, the price of imported grain, i.e. the import parity price, sets an upper bound on domestic maize prices, while export parity sets a floor price below which prices will not fall, provided grain can flow
freely across their borders. When domestic prices trade at higher levels than the price of imported grain, then consumers are being unnecessarily taxed by inefficient marketing systems. Conversely, if prices drop below the prices that are available in export markets, then surplus producers are being denied the opportunity to generate greater income from crop sales.

3.3 Lessons from Zambia’s Response to Deficit and Surplus Harvests

Zambia’s response to the 2001/02 drought is illuminating as it shows the extent to which frequent and highly unpredictable trade policies can negatively affect the prices consumers pay for maize. In response to the 2001/02 drought the Zambian government announced its intention to tender for the import of 200 thousand tonnes of maize and to sell that grain at subsidized prices through selected large millers (Haggblade et al., 2008). Due to delayed financing for these government-sponsored imports actual shipments did not begin until December, and by May 2002 only 130 thousand tons had arrived. Under the government subsidy, sixteen designated millers sold the imported grain at $70 to $100 below market price. As a result, private traders declined to import maize at commercial prices for fear of losing money (Nijhoff et al. 2002). The effect in terms of domestic prices was dramatic. As shown in Figure 4, maize prices in Zambia soared well above where they would have been if commercial imports had been encouraged, thereby unnecessarily hurting Zambian consumers.

Figure 4: Trends in Import Parity and Domestic Prices for White Maize

More recently Zambia has experienced a series of surplus maize production years. However, exports of maize have been limited. This is due, in part, to the issuance of Statutory Instruments explicitly banning maize exports, de facto maize export bans caused by delays in the issuance of export permits, restrictions on trade from importing countries, and, importantly, the scale of the Food Reserve Agency’s maize procurements, which severely limited the amounts of grain on the maize for the private sector to buy. As shown
in Figure 5, the result of these market controls were maize prices that were well below export parity (to Harare) for the period 2010-to late 2012. These low prices denied farmers an opportunity to generate higher returns from maize sales.

**Figure 5: Zambia’s maize export parity, import parity (South Africa) and Lusaka prices**

![Graph showing maize prices over time](image)

Source: FAO GIEWS food price data analysis tool, AMIC

Interestingly, formal export bans in Zambia did not seem to have a measurable effect on reducing consumer maize meal prices. Table 2 presents retail maize meal prices in Lusaka during the periods of two recent formal export bans on maize and maize meal. While it is difficult to measure the counterfactual, i.e. where the prices would have moved in the absence of the export ban, what is clear is that the bans did not lead to a significant drop in consumer maize meal prices.

**Table 2: Imposition of export bans against monthly retail mealie meal prices**

<table>
<thead>
<tr>
<th>Period of Export bans</th>
<th>Lusaka mean monthly retail mealie meal prices (real 2013 ZMW)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Export ban introduced</td>
<td>December 2012, 2.38</td>
</tr>
<tr>
<td></td>
<td>January 2013, 2.45</td>
</tr>
<tr>
<td></td>
<td>February 2013, 2.15</td>
</tr>
<tr>
<td></td>
<td>March 2013, 2.13</td>
</tr>
<tr>
<td>Export ban lifted</td>
<td>April 2013, 2.27</td>
</tr>
<tr>
<td>Export ban reintroduced</td>
<td>September 2013, 2.42</td>
</tr>
<tr>
<td></td>
<td>October 2013, 2.43</td>
</tr>
<tr>
<td></td>
<td>November 2013, 2.43</td>
</tr>
<tr>
<td></td>
<td>December 2013, 2.66</td>
</tr>
</tbody>
</table>
3.4 Lessons from Kenya’s Response to the 2008/09 Global Food Price Spike

As summarized in Kirimi et al 2011, in 2008 Kenya faced a poor main harvest, while simultaneously coping with the aftermath of the civil disruption following the December 2007 national elections and rising world food prices. Despite these pressing issues, Kenyan policymakers maintained the 50% tariff on maize imports through the port of Mombasa, thereby limiting the extent to which imports could bring down domestic prices. As a result, local food prices rose sharply in 2008. Figure 6 presents Nairobi wholesale maize price trends denominated in U.S. dollars. Note that 2007 price levels were relatively average despite the surge in world food prices that had already begun. High world prices in 2007 and early 2008 no doubt exerted upward pressure on Kenyan maize prices by mid-2008, when the market adjusted to an import parity price surface in anticipation of the need for imports. However, because of delays in government importation and government’s decision to maintain the 50% tariff on imports through Mombasa throughout 2008, maize prices stayed at levels almost 50% above world prices by late 2008 despite the tumbling world prices starting in September 2008. Maize prices usually decline by November or December in Kenya as the main season harvest hits the market. The fact that prices continued to exceed $300 per ton at this time could have been an indicator of a food crisis to come.

In January 2009, Kenya’s food crisis took a new turn as allegations of corruption over the issuing of import licenses, reported diversion of over 100,000 tons of imported maize to Sudan, and a lack of transparency over the sale of subsidized NCPB grain (AFRICOG 2009). On January 16, 2009, President Mwai Kibaki declared a state of emergency and launched an international appeal for US$ 463 million to feed roughly six million people who were estimated to be food insecure. In January, the World Food Programme pledged to feed 3.2 million people following the government’s declaration of a food crisis in the country. The import duty on maize was finally lifted on January 28, 2009, allowing importers to buy maize from the international market and bring it into the country duty free at which point domestic prices began to decline. In many ways, therefore, the food crisis in Kenya was a manufactured one, caused by unwillingness to loosen trade controls despite low local supplies and rising prices.
3.5 Lessons Learned from Malawi’s Response to an Anticipated Deficit

Government interference in importation also led to huge price swings in Malawi. In 2002, the Malawi government had forecasted a deficit of 430,000 tons for the 2002-03 season. In response, the government acted promptly by importing 250,000 tons of maize entirely through public channels (the NFRA) and arranged for 150,000 tons of food aid, for a total formal inflow of over 400,000 tons which was sufficient for the forecasted deficit. Unfortunately, these decisions by government did not consider the large informal flows of white maize from Mozambique into southern Malawi—an estimated 150,000–250,000 tons—which left the country with a large maize surplus (Whiteside 2003). In March 2003, the harvest was better than forecasted and thus the government was faced with large stocks of maize and depressed prices (Jayne and Chapoto, 2009).

3.6 Welfare and price effects of export restrictions in Tanzania

Based on a study by Diao et al (2013) maize export bans can have a dramatic effect on the welfare of rural producers, with minimal gains for consumers. According to the analysis export bans can lower producer prices by 7 to 26 percent in surplus regions, such as Mbeya, while simultaneously increasing the number of poor households in those regions relative to if there were no bans in place. As a result of lowered producer prices, the growth rate in maize production is pushed down from an annual growth rate of 5 to 5.7% without
bans to 3.4 to 4.5% with the bans. Despite these negative effects on producers’ welfare, the bans only succeeded in lowering the national food price index by 0.6 to 2.4% relative to if the bans were not in place.

3.7 Lessons Learned from Mozambique

Mozambique provides a contrasting picture to the stories presented above. Overall, Mozambique experiences fewer major price swings for maize than other countries in the region, aside from South Africa. In Mozambique, private trade plays the prominent role in the maize markets and the government does not directly participate in the maize import or procurement business. The Southern Mozambique contains the nation’s largest urban population and is perpetually food deficient. The center of the country is typically but not always in surplus, whereas the north produces a surplus every year. In response to this production pattern and to the long distances and high costs of transporting maize from the north to the south, Mozambique has maintained an open border policy with respect to maize trade, regularly exporting from the north and importing from South Africa to the south (Chapoto and Jayne, 2009).

3.8 Modelling Price Levels With and Without Trade

How do domestic prices respond to sharp changes in production levels under different trade regimes? To answer this, Dorosh, Dradri, and Haggblade (2007) used 15 years of historical data on Zambian maize production, trade, domestic and border prices to estimate the impact of a bumper harvest and drought induced deficit on domestic maize prices under conditions of free trade and trade restrictions.

In their model they assumed a drought year leads to a drop maize production of 30% below its fifteen year normal average level. Under closed borders, a 30% fall in maize availability causes the maize price to skyrocket, increasing by 163% (Table 3). Under free trade, however, the import parity price from South Africa places a cap on the price increase. Given normal historical price spreads, import parity would cap the Lusaka maize price increase at 36%.

<table>
<thead>
<tr>
<th>Production scenario</th>
<th>Maize Price Under Alternate Trade Regimes</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Closed border</td>
</tr>
<tr>
<td>Bumper maize harvest (30% above normal)</td>
<td>-50%</td>
</tr>
<tr>
<td>Dought (maize harvest 30% below normal)</td>
<td>163%</td>
</tr>
</tbody>
</table>

Source: Dorosh, Dradri, and Haggblade (2007)
Conversely, in a year of bumper harvest, export parity prices will set a floor on the price fall. Assuming a 30% increase over normal production levels, closed borders would trigger a 50% fall in domestic maize prices. Following this decline in maize prices, they also projected that farmers would reduce area planted with maize by as much as 15% in the following season, leading to an entrenched cycle of underproduction. But when exports are allowed, the export parity price (to DRC) limits the domestic price fall to 26%, roughly half of the decline registered in a closed economy. Thus, in both good years and bad, open borders place bounds on the magnitude of domestic price movements, both upwards and down.

This closely mirrors findings from a study in Tanzania, where trade restrictions in response to a surplus production year contributed to only marginal declines in consumer prices and steep declines in producer prices. A study by IFPRI in Tanzania shows that imposing cross-border maize export bans lower the national food price index by only 0.6–2.4% compared with the free-export scenario. The study also notes that although minimal, these benefits of lower consumer prices are primarily captured by urban households. On the other hand maize producer prices decrease by 7–26% implying negative impact on rural households. Thus, export bans decrease the wage rate for low-skilled labor and the returns to land, while returns to non-agricultural capital and wage rate for the skilled labor increase, further hurting poor rural households and thus increasing poverty for the country as a whole (Diao et al. 2013). This underscores the point that export restrictions largely penalize producers and confer only limited benefits to consumers.

4.0 MARKET DEVELOPMENT EFFECTS OF TRADE RESTRICTIONS

Trade restrictions on maize can contribute to a negative cycle of chronic under investment in critical trade infrastructure, including storage, roads, rails, and ports, from both the public and private sector. This in turn contributes to high transactions costs of moving grain from surplus to deficit regions, high levels of grain spoilage, and resultant high costs of maize for consumers and lower prices for producers. In the sub-sections below the effects of trade restrictions on investments in market development from the public and private sectors are examined.

4.1 Costs of Trade Restrictions to the Public Sector

Trade restrictions on maize by maize producing countries deprives national treasuries of revenue through both the loss of foreign exchange earnings that would have been obtained through trade as well as any tax revenue generated as a result of formal exports. The scale of this foregone revenue can be staggering. Table 4 presents calculations from Zambia on the foregone foreign exchange earnings and revenue from export tariffs and licenses over the period 2008/09 and 2012/13. During this period Zambia recorded a series of impressive bumper harvests. However, due to a number of factors, including continued imposition of export bans, the use of the government’s Food Reserve Agency to purchase the majority of the surplus, and high levels of storage losses in government silos, the
amount maize that was available for export but not formally exported was in the range on 3.1 million mt. Assuming a conservative $220 per ton export price, plus $20 per ton licensing fees, the Government of Zambia lost approximately $760,000,000 in potential revenue as a result of not fully engaging with export markets during these bumper harvest years.

These foregone earnings represent approximately 3.6% of Zambia’s total GDP in 2012. This lost revenue deprives the Zambian treasury of income that could otherwise be used to invest in road infrastructure, improved agricultural extensions, agricultural research and development and other critical public goods needed to enhance productivity and lower marketing costs in the country.

Table 4: Value of Foregone Foreign Exchange and Tariff Revenue as a Result of Limited Maize Exports 2008/09-2012/13

<table>
<thead>
<tr>
<th>Production year</th>
<th>Production (1000 MT)</th>
<th>Production + carryover stocks (1000 MT)</th>
<th>Domestic Consumption (1000 MT)</th>
<th>Expected Exports (1000 MT)</th>
<th>Exported Formally (1000 MT)</th>
<th>Not Exported Formally (1000 MT)</th>
<th>FORGONE FOREIGN EXCHANGE EARNINGS through Trade ($US)</th>
<th>LOST TARIFF AND LICENSING REVENUE ($US)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2008/09</td>
<td>1,887</td>
<td>1,950</td>
<td>1,700</td>
<td>250</td>
<td>173</td>
<td>77</td>
<td>$16,940,000</td>
<td>$1,540,000</td>
</tr>
<tr>
<td>2009/10</td>
<td>2,795</td>
<td>3,094</td>
<td>2,000</td>
<td>1,094</td>
<td>3</td>
<td>1,091</td>
<td>$240,020,000</td>
<td>$21,820,000</td>
</tr>
<tr>
<td>2010/11</td>
<td>3,020</td>
<td>3,450</td>
<td>2,500</td>
<td>950</td>
<td>30</td>
<td>920</td>
<td>$202,400,000</td>
<td>$18,400,000</td>
</tr>
<tr>
<td>2011/12</td>
<td>2,853</td>
<td>3,550</td>
<td>2,500</td>
<td>1,050</td>
<td>358</td>
<td>692</td>
<td>$152,240,000</td>
<td>$13,840,000</td>
</tr>
<tr>
<td>2012/13</td>
<td>2,532</td>
<td>2,988</td>
<td>2,500</td>
<td>488</td>
<td>73</td>
<td>415</td>
<td>$91,300,000</td>
<td>$8,300,000</td>
</tr>
<tr>
<td>Sub-Total</td>
<td>3195</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$702,900,000</td>
<td>$63,900,000</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>$766,800,000</td>
<td></td>
</tr>
</tbody>
</table>

Source: MAL/CFS, COMTRADE on formal exports

4.2 Enabling Informal Markets

Of course not all of the maize that is not formally exported remains in the country. Throughout the region national borders created by European colonial powers separate people and markets that historically were closely integrated. Indeed, many surplus production areas are separated from their natural markets by these arbitrary borders and the trade restrictions that are imposed along them (Haggblade 2013). This includes Zambia’s Copperbelt and the Katanga Province in DRC, Southern Malawi from Northern Mozambique, Eastern Zambia from Central Malawi, Northern Tanzania from Southern Kenya, and Northern Zambia from the markets in Tanzania and Kenya. Due to the supply and demand conditions that exist in these natural grain markets and the long and porous borders that separate them, trade restrictions are incapable of actually stopping the flow of
Instead, trade restrictions tend to push trade from the formal, regulated and taxable sector, to the informal sector.

Malawi’s experience in 2013 is indicative of the ways in which formal trade restrictions can facilitate the expansion of informal trading. As shown in Figure 7, in September 2013 Malawi witness an unprecedented surge in informal maize trade from Zambia. This surge in informal trade coincided with the imposition of a formal export ban in Zambia. In the September to November period, 80% of the captured informal maize imports were from Zambia while Mozambique, the usual source of Malawi’s informal imports, only contributed 20%.

![Figure 7: Observed Malawi Informal Maize Import Trends (MT)](image)

Source: FEWNET Cross-border monitoring

Informal grain trade entails costs that are not incurred through formal trade. These include costs associated with evading or bribing border agents, as well as costs associated with loading and unloading small volumes on bicycles to be moved across the border. As a result of these costs, informal trade tends to be considerably more expensive than formal trade. Where informal trade flourishes, maize prices tend to be higher that if formal trade was encouraged. These higher prices are transmitted to consumers, but do not necessarily pull up farm gate prices, leading to rents being generated by market intermediaries.
4.3 Effects of Trade Restrictions on Private Sector Investment

Reliable cross border trade is a critical precondition for unlocking private sector investment in maize marketing and production. Due to the frequently ad hoc nature of trade restrictions and other state interventions in grain markets the level of policy induced price uncertainty in the region is extremely high. Private sector wholesalers are therefore frequently unwilling to take speculative positions in grain markets or to invest significantly in grain storage, because grain prices can move quickly as a result of governments’ decisions on the release of strategic grain reserves on the market, the imposition or removal of tariffs, and/or import and export bans. This leads to a vicious cycle in which private sector underinvests in grain infrastructure and procurement, leading to pressure on the public sector to continue to intervene in markets.

While estimating the foregone private investment resulting from high levels of policy uncertainty is difficult, some indicative figures are available in Zambia. According to the Grain Traders Association the private sector in Zambia has already invested approximately $US 30 million building 550,000 mt of high quality grain storage. This storage can absorb about half the available maize in Zambia during a bumper harvest. If the policy environment for maize trade was made more predictable, grain traders report that they have plans in place to expand this to 23 major storage sites in 18 districts. This would bring their total capacity to 825 million mt of storage and would cost approximately $45 million. However, rather than leverage this potential investment opportunity, the Government of Zambia has included approximately $30 million in its 2013 budget to build 600,000 mt of additional public storage. This money therefore represents a significant opportunity cost for alternative public investments in agriculture, which could better address the persistent challenge of low productivity and high marketing costs.

In addition to the foregone investments in market infrastructure, unpredictable trade restrictions also undermine potential private investments in input credit to smallholder farmers. Grain traders in Zambia indicate that if regional trade was permitted they would be willing to provide input credit, in the form of maize seed and fertilizer, to small-scale farmers, which they would recoup when farmers delivered their crops for sale. The reason free trade is important for these sorts of arrangements is because the grain trading firm can use futures contracts on SAFEX to hedge their position in the market, thereby guaranteeing themselves a certain price level on the anticipated grain produced through these input credit arrangements. This price hedging would also enable the firms to provide a floor price to farmers under the credit arrangement, with a split margin if prices rise above the floor level. Indeed, despite current trade uncertainty in Zambia some grain trading firms are already exploring input credits options for maize. Cargill for example provided over $12 million in input credit for maize to 25,000 farmers in 2013. This could be significantly scaled up if trade were permitted.
5.0 CONCLUSIONS AND RECOMMENDATIONS

The current maize market situation in the region, where supplies are incapable of meeting demand requirements and maize prices frequently trade outside of the bounds set by import and export parity prices, is not an effective recipe for promoting economic growth, poverty reduction and improved food security. Charting a new path in regional maize market integration is therefore imperative. Based on the available evidence, high levels of unpredictable intervention in domestic markets and regional trade exacerbates maize price variability, decreases tax revenue and foreign exchange generation for surplus countries, and undermines private investment in grain market infrastructure and smallholder input credit.

Unlocking the agricultural potential of the region will require that farmers are given the price incentives and tools to raise yields, that the public sector invests in the road and port infrastructure to facilitate trade, and that the private sector complements public investments to increase storage capacity and to better link producers to consumers. Moving toward a more transparent and predictable set of rules and guidelines around maize trade are a critical part of unlocking this potential.

How can policy makers create the conditions for agricultural-led growth through regional trade, while at the same time managing the fears of domestic grain shortfalls and price spikes? Broadly, we recommend moving toward a policy framework that enhances the predictability of government actions in the market through a process of consultative and rules-based interventions. Through this process, state interventions in the market are pre-defined, well-known to all interested parties, and based on prevailing market conditions. It is important to note that this does not imply the full liberalization of trade or the loss of control over food supplies by the government. Instead, it marks a shift in policy towards a more rationalized system in which governments set the rules of the game to encourage participation by all interested stakeholders.

Steps policy-makers can make in this regard are as follows:

1. Governments and regional bodies should support the development of professional agencies for generating and disseminating accurate crop production forecasts and price information. These can be developed at a national level, but ideally would also be housed in a regional database.

2. Accurate price and production data should be fed into consultative national and regional policy dialogues aimed at determining governments’ intended actions in maize markets in a given year. These dialogues should be used to solicit insights from a wide range of stakeholders, including farmers’ associations, trade groups, consumer advocacy groups, and policy makers. Based on this consultation, governments can announce a clear set of guidelines and interventions in the maize market for the coming season. To be effective, these must be made in advance of the main maize harvest.

   a. These dialogues will determine the prices at which government action will be triggered. For example, if domestic wholesale prices drop below a defined price, ideally determined in relation to export parity, governments may
waive export permit costs, export duties, or, in some cases, intervene in crop procurement. Again, the price of government purchases would be announced and known to all actors. Conversely, if prices rise above an agreed level government may initiate imports, release government grain stocks onto the market, or waive import licensing fees. Only if prices reach a predetermined level will trade restrictions be imposed.

3. Governments can explore alternative means for managing national strategic reserve stocks. This can include:
   a. Issuance of quotas to the private sector to buy on behalf of the government. These quotas would include the quantity, quality, price, and location of the stocks. If, at a predetermined time, national prices are within tolerable and predetermined ranges, governments can forego their options on this maize and allow the private sector to sell without restrictions in the domestic and regional market.
   b. Governments can use call options on SAFEX to manage a portion of their reserves through financial instruments. Call options give the buyer the right, but not the obligation, to a commodity at a determined price, quantity, and delivery date/location. Governments can procure options for multiple delivery dates and announce at what domestic price these options would be exercised. This strategy adds predictability to the market and lowers the costs of managing reserves to governments.

4. With additional revenue generated through maize trade and decreased expenditure on strategic reserve management, governments can increase public investment in road, rail, and port infrastructure. A considerable part of the food price instability problem in the region is due to the high cost of transportation, which widens the price wedge between import and export parity prices throughout the region.
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