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Report 1. Country Annexes.

Maize Market Sheds in Eastern and Southern Africa

by

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Annexes to the report prepared by Michigan State University
for the World Bank under contract No. 7144132, *Strengthening Food Security in Sub-Saharan
Africa through Trade Liberalization and Regional Integration*

June 28, 2008

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Annex 1.

South Africa Maize Trade Country Profile

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March 2008

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Acknowledgements: Funding for this research was provided by Michigan State University under World Bank Project No. No. 7144132 *Strengthening Food Security in Sub-Saharan Africa through Trade Liberalization and Regional Integration* . The author would like to thank Ferdinand Meyer of the University of Pretoria, Steve Hochfeld of Hochfeld Traders Inc. Ltd., James Crichton of Southern Alliance, and Sakkie van Zyle of Grain South Africa for helpful comments and input into this study.

I. Introduction

Agriculture remains an important sector in South Africa despite its small direct share of the country's gross domestic product (GDP). In 2004 primary agriculture contributed 3% to total GDP, while accounting for over 10% of all reported employment (OECD, 2006). Within this sector, the grain industry is one of the largest, contributing approximately 16% to the total gross value of agricultural production between 2000 and 2003 marketing years (SAGIS, 2005). It is comprised of all grain and oilseed industries, of which, maize and wheat are considered primary staple commodities given their importance in promoting food security.

Over the past two decades or so, both domestic and trade policy interventions within the maize industry has occurred within the context of vast political and socioeconomic change. The overall goal of government during this period was to create an open and market-orientated economy as well as to redress the injustices of the past. The resultant set of policy interventions affecting the grain sector have successfully managed to achieve the goal of a market-orientated system, while making significant strides in achieving a more open grain sector in term of Black Economic Empowerment.

The primary objective of this case study is to describe the evolution of policies affecting cross-border trade in maize and maize meal between South Africa and the Southern African region. To this end, the major maize grain flows within South Africa, the major domestic and trade policies affecting cross-border maize trade between South Africa and its surrounding neighbors, as well as the market pricing mechanism are described and assessed.

II. Policy Environment

Table 1 below contains a chronological inventory of key domestic and trade policy decisions that affect the maize industries within South Africa between 1980 to the present. Since many of these decisions were made within the context of reform, a brief discussion on the reform objectives and the specific policies and/or institutions established in order to achieve these objectives follows the table.

Table 1. South Africa: Chronology of Maize marketing and Trade Policy Decisions and Implementation, 1980-2007

| | |
|-------------|--|
| 1980 – 1990 | <ul style="list-style-type: none">• Agricultural sector faced increasing pressure to deregulate due to changes occurring within the macro-economy. These included extensive deregulation of the financial sector in the late 1970's, which led to scaling down of subsidies on interest rates from the Land Bank while government subsidies to marketing boards were phased out in early 1980's.• White Paper on Agriculture of 1984 – established production, marketing and food self-sufficiency goals in order to ensure that factors of production would be used optimally as well as to achieve economic, political and social development and stability. Production objective was to maintain potentially productive land for agricultural purposes. Marketing goal was to pursue orderly marketing while considering the principles of the free market system. Food self-sufficiency objective was to protect large-scale producers from international competition through direct subsidies.• Maize Board shifted away from cost-plus pricing procedures towards market-based pricing systems.• Shift to pool-type pricing for maize in 1987.• Reduction in the use of price controls and registration requirements as instruments of marketing policy. For example, in mid-1980 the prohibition on the erection of maize grain silos was repealed. |
|-------------|--|

- 1991/92
 - Price controls on maize meal and fixing of millers' margins were removed.
 - A system of tariff rates replaced import and export licenses as well as quotas for maize grain.
 - Maize farmers received a final direct subsidy in the form of a drought relief payment.
- 1994/95
 - White Paper on Agriculture of 1995 - called for: transparency and inclusiveness of all market participants; product marketing to become market orientated; and price-fixing by the government to be limited.
 - Reconstruction and Development Program (RDP), which sought to mobilize the country's resources towards the final eradication of apartheid and the development of a democratic non-racial country was adopted.
 - Department of Agriculture developed the Broadening Access to Agriculture Thrust (BATAT) – aimed at achieving the goals of the RDP through land reform as well as the redirection of government support away from commercial farmers towards small-scale subsistent and newly emerging black commercial farmers.
 - ANC Policy Document on Agriculture was drafted – overall objective of this document was to ensure food security. Three goals were established: (1) removal of most agricultural marketing boards except in cases of strategic commodities such as maize; (2) removal of uniform national pricing of commodity prices; (3) government regulation of agricultural commodities limited to instances of monopoly power, food insecurity, world market conditions, or to promote agro-industrial linkages.
 - Maize Board activities were scaled down to buyer of last resort.
 - South Africa becomes a member of Southern African Development Community (SADC)
 - World Trade Organization (WTO) – South Africa became a signatory thereby becoming party to all WTO agreements including the Agreement on Agriculture (AoA) and Sanitary and Phytosanitary (SPS) Agreements
- 1995/96
 - Marketing of Agriculture Product Act 47 of 1996 – primary goal of this act was to improve market access, agricultural efficiency, and to optimize export earnings through the creation of market-driven marketing system.
 - SAFEX Agricultural Markets Division listed its first commodity; physical settled beef contract.
 - Water Act 36 of 1996 – terminated the riparian principle of water rights as well as water price subsidies.
- 1996/97
 - Maize Board was abolished, leaving prices to be based entirely on negotiation between market actors.
 - SAFEX introduces trading derivatives (futures and options) for white maize and yellow maize.
- 2000
 - Trade, Development and Cooperation Agreement (TDCA) with the European Union (EU)– free trade agreement which includes preferential access to South African markets for all EU member states and vice versa.
 - SADC Trade Protocol implemented – provides for preferential access to South Africa's markets for all SADC member countries with some reciprocal concessions
 - African Growth and Opportunity Act (AGOA) – allows for generalized system of preferences (GSP) status for certain South African products by providing duty-free access into the U.S. market.
- 2003
 - International Trade Administration Act of 2003 – established the International Trade Administration Committee (ITAC) as the tariff body for SACU.
- 2004
 - The revised Southern African Customs Union entered into force – allowed for wider participation in the decision-making process within the customs union.

Sources: Robert, et al., 1994; van Dijck et al., 1995; van Rooyen et al., 1997; Thirtle, et al., 2000; Draper, 2003; Bertelsman-Scott & Draper, 2004; Stern and Netshitomboni, 2004; SAGIS, 2005; Kirsten, et al., 2006.

Market Reform: Prior to 1996, the Marketing of Agriculture Product Act 59 of 1968 largely determined agricultural marketing policy. For the maize industry, a single-channel fixed price scheme was established which followed a cost-plus approach to commodity pricing and margin determinations. Here the maize board based their calculation of the maize grain prices for the next season on the current season's price while accounting for input costs.

By the mid-1980's, due to internal pressure from domestic producers unsatisfied with the controlled marketing of many agricultural commodities coupled with macro-factors and international liberalization trends, a series of laws were enacted that reduced the role of government within the market and placed increasing reliance on market forces and the private sector (See Table 1).

It is the Marketing of Agricultural Products Act 47 of 1996 that currently shapes agricultural marketing policy in South Africa. Under this Act, the maize board was abolished in 1997; leaving prices within the industry to be based entirely on negotiation between market actors. The formal commodities market was established following deregulation. The Agricultural Markets Division of the South African Futures Exchange (SAFEX) is the only formal future market and extremely high volumes are traded through this market. For instance, the national maize crop is traded over ten times on SAFEX due to speculation as well as hedging activities by both producers and/or traders. SAFEX is regarded as the “benchmark” for the prices market actors ask or offer in the ‘spot’ market of daily trading in maize. SAFEX also reports fixed transport differentials to various destinations in the country; consequently, the spot price for a region is derived from the SAFEX price minus the transport differential.

Budgetary Expenditure Reform: One method of complying with the goal of a market-oriented agricultural sector was to reduce government fiscal support. This was achieved by removal of direct government subsidies to the sector, and reducing the tax concession available to commercial producers. Table 2 below lists the direct agricultural subsidies paid out to the maize sub-sectors. From this table it is clear that most, if not all direct subsidies paid out were removed or reduced by the early 1990's. It was in the 1991/92 production season that maize farmers received a final direct subsidy in the form of a drought relief payment.

Table 2: Average Agricultural Subsidies, 1950 to 2000 (Millions of Rands)

| Commodity | Description | 1950s | 1960s | 1970s | 1980s | 1990s | 2000's |
|-----------|--------------------------------------|-------|-------|-------|--------|-------|--------|
| Maize | Stabilization of maize price | 44.3 | 140.7 | 462.1 | 1443.9 | 692.5 | 0 |
| | Rail rates: maize and maize products | 2.3 | 37.4 | 28.3 | | | |
| | Handling/Storage of maize | 0.008 | 0.008 | 0 | 0 | 0 | 0 |
| | Duty on imported maize | 0.5 | 0 | 0 | 0 | 0 | 86.7 |

Source: Kirsten, et.al, 2006

Currently, the majority of public investment to the Agricultural Sector is aimed at achieving the national agricultural policy objective of an inclusive, profitable, competitive market-orientated grain sector. Table 3 below summarizes the expenditure patterns for the DoA between 2003/04 and 2006/07 marketing years. Expenditure has been divided into two broad categories, Operating Costs and Programs.

Table 3: Department of Agriculture Expenditure Pattern

| (R thousands) | 2003/04 | | 2004/05 | | 2005/06 | | 2006/07 | |
|--|----------------|------------|----------------|------------|----------------|------------|----------------|------------|
| | Actual | % of Total | Actual | % of Total | Actual | % of Total | Actual | % of Total |
| Operating Costs | | | | | | | | |
| Compensation of Employees | 273086 | 22.9 | 320093 | 22.7 | 257132 | 14.2 | 462820 | 19.9 |
| Goods & Services | 258247 | 21.6 | 260709 | 18.5 | 358110 | 19.8 | 439094 | 18.9 |
| Payment for Capital Assets | 29305 | 2.5 | 64630 | 4.6 | 56564 | 3.1 | 52503 | 2.3 |
| Programs* | | | | | | | | |
| Administration | 273 | 0.02 | 863 | 0.06 | 1475 | 0.1 | 1239 | 0.1 |
| Livelihood, Economics & Business Development | 12324 | 1.0 | 215298 | 15.3 | 550644 | 30.5 | 582597 | 25.0 |
| Bio-security & Disaster Management | 259628 | 21.7 | 139803 | 9.9 | 154244 | 8.5 | 214959 | 9.2 |
| Production & Resource Management | 36608 | 3.1 | 45194 | 3.2 | 43469 | 2.4 | 59417 | 2.6 |
| Sector Services & Partnerships | 324380 | 27.2 | 360663 | 25.6 | 384474 | 21.3 | 515001 | 22.1 |
| Annual Total | 1193851 | | 1407253 | | 1806112 | | 2327630 | |

Notes: * = audited outcomes of various programs. Source: Department of Treasury, 2007

Operating Costs include payments made to wages and salaries, goods and services, and capital assets. Between 2003/04 and 2006/07 marketing year, total budgetary expenditure devoted to operating costs of the department ranged anywhere from 37% to 47% of the total budget.

The Programs category of expenditure consists of 5 programs aimed at achieving increased market access for emerging small-scale producers, increased profitability of the sector, as well as poverty reduction. These five programs include (Department of Treasury, 2007):

1. Administration which provides the DoA with political leadership as well as capital and infrastructure management services;
2. Livelihood, Economics & Business Development responsible for promoting broad based black economic empowerment within the Agriculture Sector by providing post-settlement support, facilitating international and domestic market access for emerging farmers as well as evaluating the economic performance of the sector;
3. Bio-Security & Disaster Management responsible for ensuring food safety and risk management in terms of animal diseases and plant pests through early warnings and post-disaster support to farmers;
4. Production and Resource Management focused on creating an enabling environment for increased and sustainable agricultural production through its support of agricultural research and development and transfer; and
5. Sector Services and Partnerships which provides services such as research, extension, and advisory in areas of intergovernmental, stakeholder and international relations.

Between 2003/04 and 2006/07 only two programs; Administration and Livelihood, Economics and Business Development, received increasing percentage shares of total departmental expenditures. In terms of the Livelihood, Economics and Business Development program, the main driver behind the increase in expenditure between 2003/04 and 2004/05 was the

implementation of the CASP¹ program in 2004/05. The increase in the following marketing year was largely due to a R140 million allocation to the World Food Program, as well as R150 million for the inception of the Micro-Agricultural Financial Institutions of South Africa (MAFISA) which provides micro-financing to rural households, small-farmers, and emerging agribusinesses. In terms of expenditures on bio-security and disaster management, percentage share of total budget fell from 21.7% in 2003/04 to 9.2% in 2006/07, whereas percentage share of expenditure on R&D fell from 3.1% of total expenditure in 2003/04 to 2.6% in 2006/07. Furthermore, when expenditures on infrastructure are separated out, its share of total expenditure decreases from 3.1% in 2003/04 to 2.1% in 2006/07 (Department of Treasury, 2007).

Trade Policy Reforms: In keeping with the overall objective of establishing a more market-orientated economy, as well as complying with the requirements of its various trade agreements, several trade reforms were enacted within South Africa. These include the reduction of tariff levels; the establishment of Sanitary and Photo-sanitary (SPS) standards; and the replacement of quantitative restrictions, import and export permits and specific duties with tariffs.

The result of these reforms has been a reduction in the number of tariff lines between 1990 and 1999, from 12500 in 200 tariff bands to 7743 in 47 tariff bands as well as an economy-wide reduction in the overall tariff level from 28% to 7.1% (Kirsten, et. al., 2006). In the case of the maize sub-sector, all non-tariff measures applied were abolished in favor of tariff protection based on a tariff band formula which delivers a tariff only when world prices fall below a reference price set at a level of US \$110/ton based on free-on-board US Gulf ports. Recently, the ITAC reviewed the tariff dispensation for maize, maize flour and concluded that any changes to the current dispensation would result in cost-raising impacts on downstream producers and consumers (International Trade Administration Commission of South Africa, 2007). Table 4 below summarizes the existing tariff sub-heading and rate of duty for maize and maize products.

Table 4: Current Tariff Position for Maize and Maize Products: 2007

| Tariff Heading | Sub-heading | Article Description | Rates of Duty | | |
|----------------|-------------|--|---------------|------|------|
| | | | General | EU | SADC |
| 10.05 | | Maize | | | |
| | 1005.10 | Seed | Free | Free | Free |
| | 1005.90 | Other | Free | Free | Free |
| 11.02 | | Cereal Flours | | | |
| | 1102.20 | Maize (corn) flour | Free | Free | Free |
| 11.03 | | Cereal groats, meal and pellets | | | |
| | 1103.13 | Maize | 5% | 5% | Free |
| 11.04 | | Cereal grains otherwise worked (hulled, rolled, flaked, pearled, sliced or kibbled, germ of cereals, whole, rolled flaked or ground) | | | |
| | 1104.23 | Maize | 5% | 5% | Free |

Source: ITAC, 2007

Overall, a strong indicator of the extent to which the reform policies (discussed above) have impacted the agricultural sector is a declining level of Producer Support Estimates (PSE) since 1994, relative to other countries. The Organization for Economic Co-operation and

¹ The Comprehensive Agricultural Support Program (CASP) provides farmer supports services such as research, extension, finance, information and infrastructure for emerging commercial black farmers.

Development (OECD) estimates show that between 2000 and 2003, South Africa's PSE was approximately 5%, which is well below the 31% average for OECD countries (OECD, 2006). In term of maize and wheat commodities, between 2000 and 2003, the PSE were 7.6% and 3.1% respectively (OECD, 2006). These measures indicate a relatively moderate degree of policy interventions at the producer level within these two industries. In fact, when taking policies such as labor legislation, land taxes, water tariffs, electricity rates and road and fuel taxes into account, it could be argued that the net effect of agricultural policies is in fact a slight tax on the sector (Kirsten, et.al, 2006).

Multilateral and Bilateral Trade Agreements: Due to the implementation of its various reform objectives, South Africa has been able to successfully negotiate favorable bilateral and multilateral trade agreements. These include:

1. World Trade Organization (WTO): In 1994, South Africa became a signatory of the WTO thereby becoming party to all WTO agreements, which include the Agreement on Agriculture (AoA), and SPS Agreements.
2. African Growth and Opportunity Act (AGOA): This act was promulgated in October 2000 and allows for generalized system of preferences (GSP) status for certain South African products by providing duty-free access into the U.S. market.
3. The Trade, Development and Cooperation Agreement (TDCA) with the EU: This was entered into force on January 2000. It is a free trade agreement with the European Union and provisions include preferential access to South African markets for all EU member states and vice versa.
4. The Southern African Development Community (SADC) Trade Protocol: South Africa entered into a free trade agreement with the member states of SADC in 1996 and was later implemented in September 2000. The trade protocol provides for preferential access to South Africa's markets for all SADC member countries together with some reciprocal concessions.
5. The revised Southern African Customs Union (SACU) treaty entered into force in July 2004. One of the key aims of the new treaty was to create enabling institutions to allow for wider participation in the decision-making process within the custom union. Currently the ITAC sets the tariff levels as well as the anti-dumping legislation for the customs union, and national bodies within each member country are responsible for the administration of such tariff remedies.

III. Domestic Market Trade Flow

The grain industry is one of the largest industries within the Agricultural Sector. It contributed approximately 16% to the total gross value of agricultural production between 2000 and 2003 marketing years (SAGIS, 2005). It is comprised of all grain and oilseed industries, of which, maize and wheat are considered primary staple commodities given their importance in promoting food security. In 2003/2004 maize contributed 11.6% to the total gross value of agricultural production; making it the second largest contributing agricultural commodity (second to the poultry industry); while wheat contributed approximately 3% (NDA, 2006).

The maize supply chain is comprised of six distinct activities. These include the production, storage, trading, processing, wholesaling/retailing, and consumption. Although the movement of grain from the farm-level through to the consumption-level can be classified into six distinct activities, it is not quite so simple when trying to identify the key market participants involved within each activity. The reason for this is that many of the firms involved within the market are vertically integrated with either their upstream or downstream markets. For instance, the former cooperative GWK include in their core business activities, retailing of primary inputs to production, insurance, credit, grain storage and handling, trading, and processing (GWK, 2007).

Despite this degree of vertical integration in both the wheat and maize industries, the key stakeholders along the supply chains include: producers; silo/storage owners; traders; processors (both animal and food processors); retailers; and consumers (See Appendix A-1 for value chain map).

Producers: South African grain production is dualistic in nature; comprised of commercial and subsistent producers. In 2005, approximately 18,000 commercial grain producers accounted for 90% of all grains produced, while approximately 3 million subsistence farmers, who produce for household use, accounted for the remaining 10% (SAGIS, 2005). Of the 18,000 commercial grain producers, approximately 9,000 are exclusively maize farmers while 4,000 are wheat farmers (Business Day, 2005). However, production of both these commodities is not mutually exclusive; in some of the main production regions, including the irrigation areas; producers grow both maize and wheat; this amount to approximately 5,000 producers.

Planting of maize occurs between October and December, depending on rainfall patterns, temperatures and growing season duration within the production region. Maize is predominantly grown in three of the nine provinces; these include the Free State, Mpumalanga and the Northwest Province. These three provinces alone, account for approximately 85% of the total maize produced in South Africa. (ITAC, 2007). Although the official statistics produced by the National Department of Agriculture does not differentiate between irrigated vs. rain-fed production areas; 2005 estimates of the portions of maize that was irrigated include 36% in the Free State, 20% in Mpumalanga, and 28% in the Northwest Province (FAO, 2005).

Domestic producers are more than able to meet local demand requirements for both human and animal feed consumption in most production years. Table 5 below summarizes the domestic production, consumption and excess food needs in terms of maize, between 1990 and 2006. Although yellow maize is predominantly used in the feed market, both white and yellow maize have been included in the calculation of total production, since in years of white maize shortage, yellow maize is used as an additive in the processing of maize meal for human consumption.

Table 5. Total Annual Maize Production and Human Consumption: 1990 – 2006 (1000 ton)

| | Total Maize Production by Province ² | | | | | | | | | | Human Consumption ³ | Animal Feed ⁴ | Domestic Excess Needs |
|---------|---|-----|-----|------|-----|------|-----|-----|------|-------|--------------------------------|--------------------------|-----------------------|
| | WC | EC | NC | FS | KZN | MP | LP | GP | NW | Total | | | |
| 1990/91 | 3 | 62 | 110 | 2121 | 340 | 2074 | 107 | 435 | 2573 | 7825 | 2534 | 4235 | 1056 |
| 1991/92 | 2 | 34 | 125 | 850 | 237 | 1092 | 49 | 163 | 404 | 2956 | 2567 | 4455 | -4066 |
| 1992/93 | 5 | 65 | 157 | 3310 | 295 | 2254 | 69 | 450 | 2466 | 9071 | 2743 | 4085 | 2243 |
| 1993/94 | 6 | 76 | 178 | 4336 | 359 | 2672 | 168 | 716 | 3635 | 12146 | 2918 | 3855 | 5373 |
| 1994/95 | 20 | 90 | 160 | 1257 | 266 | 1135 | 68 | 281 | 1167 | 4444 | 2540 | 3877 | -1973 |
| 1995/96 | 25 | 117 | 180 | 3292 | 328 | 1948 | 64 | 465 | 3275 | 9694 | 2807 | 4035 | 2852 |
| 1996/97 | 25 | 45 | 192 | 3410 | 339 | 1732 | 69 | 389 | 3385 | 9586 | 2912 | 3826 | 2848 |
| 1997/98 | 5 | 34 | 176 | 2540 | 269 | 1486 | 48 | 370 | 2275 | 7203 | 3382 | 3001 | 820 |
| 1998/99 | 8 | 31 | 201 | 2760 | 247 | 1870 | 47 | 366 | 1923 | 7453 | 3381 | 2960 | 1112 |
| 1999/00 | 9 | 47 | 258 | 4194 | 289 | 2360 | 124 | 455 | 3256 | 10992 | 3426 | 2936 | 4630 |
| 2000/01 | 9 | 46 | 320 | 2695 | 256 | 1520 | 88 | 334 | 2215 | 7483 | 3589 | 3068 | 826 |
| 2001/02 | 14 | 45 | 511 | 3217 | 402 | 2068 | 106 | 484 | 2885 | 9732 | 3877 | 3146 | 2709 |
| 2002/03 | 21 | 51 | 534 | 3337 | 385 | 1882 | 162 | 418 | 2601 | 9391 | 3708 | 3155 | 2528 |
| 2003/04 | 15 | 82 | 511 | 3100 | 390 | 2219 | 115 | 482 | 2568 | 9482 | 3712 | 3416 | 2354 |
| 2004/05 | 20 | 88 | 557 | 4113 | 400 | 2807 | 120 | 483 | 2863 | 11451 | 3740 | 3427 | 4284 |
| 2005/06 | 27 | 70 | 443 | 2080 | 310 | 1615 | 58 | 325 | 1690 | 6618 | 3825 | 3528 | -735 |

Note: 2004/05 and 2005/06 are based on estimates

Source: Abstract of Agricultural Statistics (NDA: <http://www.nda.agric.za/>)

From this table it is clear that domestic maize producers exceed local food consumption requirements; one exception is in the 1991/92 and 1994/95 marketing year, when domestic demand exceeded production due to drought conditions within the region.

Average maize production has been increasing despite the declining trend in the acreage planted to maize since the deregulation of the markets. This is largely due to the adoption of more suitable varieties and improved production practices.

In general, commercially grown maize grain grown is delivered via rail and/or road transportation to either Storage Silos located throughout the country in major growing areas, or directly to processors, depending on the method of sale. However it should be noted, that due to increasing storage costs, some producers are developing on-farm storage units in order to minimize costs (Hochfeld, 2007).

Storage Industry: Prior to market liberalization in 1996/1997, co-operatives or storage silos arose within a pre-set radius due to the restrictive policies on the movement of grain within the country and pan-territorial pricing. Under guidelines of the Grain Silo Committee, silos with capacity of

² Province abbreviations: WC = Western Cape, EC = Eastern Cape, NC = Northern Cape, FS = Free State, KZN = Kwazulu Natal, MP = Mpumalanga, LP = Limpopo Province, GP = Gauteng, NW = Northwest Province

³ Includes drinkable alcohol

⁴ Includes wet milling

15.5 million tons (maize equivalent) were built at 220 depots in the northern part of the country, while 46 depots with capacities of 972,856 tons were built in the south (ITAC, 2007). These silos, under special licensing agreements with their grain board, were given the right to collect and store grain (Essinger, 1998). Following reform and the conversion of cooperatives to joint equity companies, the former cooperatives remain closely tied to grain farmers within their operating areas through the provision of farming equipment, insurance and financing. Currently there is approximately 17 million tons of bulk storage capacity within the country; of which, 85% is owned by former co-operatives (ITAC, 2007). Table 6 presents the concentration of ownership in the silo industry where the top three co-operatives/companies own 56 percent of all the domestic storage facilities.

Table 6: Relative share of bulk storage capacity and primary location: 2008

| Silo Owners | Number of Storage Silos Owned | % of Total Silo | Primary Province of Location |
|----------------|-------------------------------|-----------------|------------------------------|
| Senwes (SWK) | 55 | 23 | Free State |
| Afgri (OTK) | 55 | 23 | Mpumalanga |
| Noordwes (NWK) | 23 | 10 | North West |

Source: Farmwise <http://www.farmwise.co.za/>

Traders: Traders perform a core function within the maize market; namely the movement of maize grain between deficit and surplus regions both within the domestic as well as international markets. The trading/brokering market in South Africa is dominated by two multinational companies, Cargill and Louis Dreyfuss. In general Cargill is involved in trading for the domestic market whereas Dreyfuss is primarily focused on the import-export markets (le Clus, 2004). The remaining firms involved in the market can be divided into three groups; independent, bank-associated and silo-associated traders.

Processors: The processors along the maize supply-chain include the milling and the animal feed industries. The animal feed industry can be divided into the formal and informal feed industry. The formal feed industry consists of approximately 100 to 150 large processors, which tend to be located near major port cities (Meyers and Strauss, 2005). The informal sector is comprised of all non-members of the Animal Feed Manufacturers Association (AFMA); this includes feedlots, small-scale feed millers and home-mixers.

Maize milling for human consumption consists of both wet and dry milling. The degree of concentration within the milling industry is a legacy of the former marketing system under which, grain processors had to be registered with the maize board. Prior to market reform, the single-channel flow of grain from rural to urban areas lead to the establishment of registered millers within the major urban areas. Currently, there are at least 190 companies involved in maize milling. In 2004, twenty-two millers were responsible for generating 85% of all maize milled within the country with the top 4 companies accounting for approximately 73% of total market share (de Villers et. al., 2003, NAMC, 2004).

Retailers: Within South Africa, the channel of food distribution does not follow a traditional pattern of manufacture-to-wholesaler, wholesaler-to-retailer structure. Rather many of the larger retailers have internalized the role of wholesalers by creating their own distribution network internally, thereby dispensing with the need for wholesalers (Achterberg and Hartzenberg, 2002). Over the years, due to mergers and acquisitions the wholesale/retail sector has become highly

concentrated (Achterberg and Hartzenberg, 2002; Ntloedibe, 2001). For example, in the 1990's the wholesalers Makro was owned by Woolworths, Metro was owned by OK Bazaars, Price Club was owned by Pick 'n Pay, Browns & Weir was owned by Spar and all but one Spar wholesaler was owned by the Spar Group. By the early 2000's Massmart owned Makro, Browns & Weir and Jumbo wholesalers, Metro was owned by Price Club and Trador, and the Spar Group owned all the Spar wholesalers within the country. The consolidation within the market as well as the growing trend of franchising under the stipulation that franchisees purchase their products from or through their franchisers has led to the wholesale/retail sector having considerable bargaining power when negotiating buying terms with suppliers.

In terms of staple food retailing, national chains such as Woolworth, Pick 'n Pay, and Spar service medium to higher-income consumers in both the urban and peri-urban areas, whereas regional retail outlets (some of which are associated with regional millers) and neighborhood spazas service low-income consumers in rural, urban and peri-urban areas.

Consumers: Maize meal is considered a staple food within South Africa, particularly among the poor. According to the Food Security Survey conducted in August of 2002, starches were the second most frequently available food found in households second only to salt and/or other food-flavor enhancers (de Swardt, 2003). In 2000, annual expenditure on maize products was estimated at R6200 million and in terms of per capita consumption, it headed the list of major consumer products with more than 92 kgs/person/year (Agricultural Writer's Association, 2000; NDA, 2006). Furthermore, according to the NALEDI in 2000, the ultra-poor spent over 50% of their income on food, of which, up to 20% was spent on maize meal alone (Watkinson, et al., 2002). In general, the "typical" maize meal consumer refers to a low-income individual residing in urban and rural areas. However, it is important to note that per capita consumption of maize meal has been decreasing over the past two years while average annual expenditure on wheat products has been increasing (BFAP, 2006).

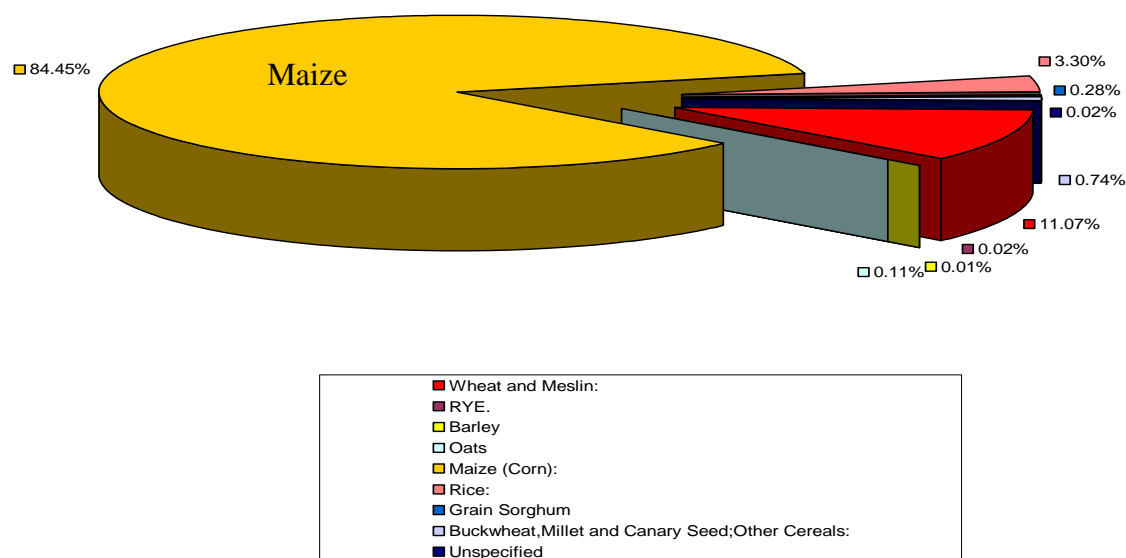
The second largest consumer of maize grain is the animal feed industry. Yellow maize is the dominant feed grain in South Africa, with white and wheat grains regarded as possible substitutes. Estimates of own-price elasticities for the feed grain consumption of white, yellow and wheat grain indicate that yellow grain consumption tends to be more inelastic relative to white and wheat (Meyer, 2006). According to the AFMA, maize products alone, constituted approximately 55% of the 4.2 million tons of feed produced by their millers. In the same year, the South African Feedlot Association estimated that approximately 65% of 1.3 million tons of feed used in feedlots were comprised of maize products (Meyer and Strauss, 2005).

IV. International Maize Trade

International trade has taken on an increasingly important role in the South African economy. Over the past two decades, both imports and exports have grown faster than the overall economy. For instance, between 2005 and 2006, Exports and Imports percentage share of GDP increased from 26.8% to 29.1% and 28.3% to 33.0%; respectively (World Bank, 2007). This growth rate in exports and imports occurred, despite the overall decline in GDP between 2005 and 2006. In terms of overall trade, between 1992 and 2006, agricultural commodities and goods accounted for 4.4% and 2.3% of total exports and imports; respectively (DTI, 2007).

Of this share, the maize industry is the largest contributing subsector. Figure 1 below illustrates the disaggregated percentage share of total cereal export values. When disaggregated, the maize subsector, between 1999 and 2005 contributed approximately 85% to the total value of cereal exports. This amounted to approximately R7.5 billions, in nominal terms.

Figure 1: Maize Grain Contribution to Total Cereal Export Values: 1999 to 2005



In general, surplus maize grain and meal is exported mainly to BLNS countries (Botswana, Lesotho, Namibia, and Swaziland), Harare in Zimbabwe, Kenya, Maputo in Mozambique, Zambia, and Mauritius and in some years, to Japan. Table 7 below summarizes the percentage shares of total South African maize grain exports for the top ten export destinations between the pre- and post-deregulation time periods.

Table 7: The Main Export Markets for South African Maize Grain

| Pre-deregulation (1988 – 1996) | | Post-deregulation (1997 -2006) | |
|--------------------------------|--------------------------|--------------------------------|--------------------------|
| Country | Average Market Share (%) | Country | Average Market Share (%) |
| Japan | 41.1 | Zimbabwe | 39.9 |
| Iran | 8.6 | Kenya | 10.9 |
| Malaysia | 5.7 | Japan | 10.8 |
| Kenya | 4.7 | Zambia | 8.3 |
| Korea | 4.5 | Mozambique | 5.8 |
| Taiwan | 3.2 | Malawi | 4.6 |
| Venezuela | 2.8 | Iran | 2.9 |
| Zimbabwe | 2.7 | Angola | 2.8 |
| Indonesia | 2.5 | Venezuela | 2.7 |
| Mexico | 2.5 | Tanzania | 2.0 |
| Top countries | 78.3 | Top countries | 90.6 |

Source: SADC Trade Database

Within the reform period, approximately 72% of total maize grain exports were traded with African countries compared to 2.7% under the pre-reform period. The change in the make-up of export markets can be attributed to several factors. These include; the removal of sanctions within the Southern African region, and South Africa's involvement in regional and continental agreements such as the New Economic Partnerships for African Development (NEPAD), African Union (AU), and SADC.

In terms of trade within the region, South African maize grain traders face several constraints to efficiency. These include (Crichton, 2008):

1. Uncertainty caused by unpredictable export bans, import tariffs, state importation and/or stock releases. For example, during the 2005/06 marketing year, the Zambian government imposed an import duty on maize given its assumption of a high carry over-stock from the previous marketing season due to export bans imposed within the 2004/05 marketing year on maize grain (Fews Net, 2005).
2. Lack of suitable storage facilities within export markets.
3. Lack of sufficient funding on part of regional consumers.
4. Poor quality of maize grain originating within regional markets.
5. Non-tariff trade barriers in terms of non-GMO requirement for white maize. For example, Zambia prohibits GMO maize, while countries such as Zimbabwe, Malawi, and Angola will only allow the importation of milled GMO maize products. Currently, 45% of South African white maize is GMO free. However, given the methods of monitoring the two streams at the silos⁵, there exists potential for cross-contamination.

Given South Africa's self-sufficient in terms of maize production, imports are limited to years of shortages and/or periods towards the end of the marketing season where imports may be needed to stabilize the flow of grain throughout the supply chain. In general, Argentina and the U.S. markets serve as the primary sources for imported maize grain. In 2007, Argentina alone accounted for approximately 96% of the total value of maize grain imports, while the U.S. accounted for 1.5% (DTI, 2008). Given the location of large feed-mills in Kwazulu-Natal and the Western Cape, the two primary ports of entry for imported maize grain include the Durban and Cape Town harbour. In general, South Africa primarily imports yellow maize for feed-purposes while the importation of white maize only occurs within periods of regional shortages (NDA, 2008). Table 8 below summarizes the volume of maize grain imports into South Africa between the 1989/90 and 2006/07 marketing years.

⁵ Silo operators, given time restraints, rely on the verbal assurance of the farmer on the GMO status of maize grain delivered rather than testing every truck load of maize delivered (Meyer, 2008)

**Table 8: Maize Grain Imports and Ending Stocks: 1989/90 to 2006/07
(thousands of MT)**

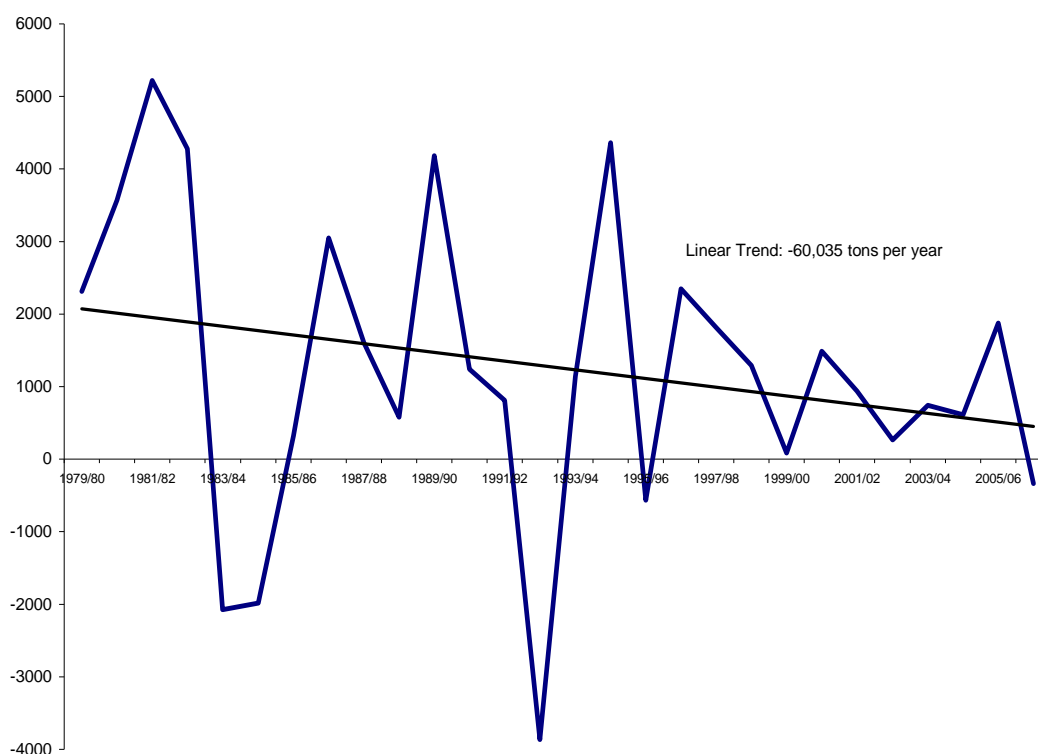
| Marketing Year | Maize Grain Imports | | | Maize Grain Ending Stock | | |
|----------------|---------------------|-------|-------------|--------------------------|-------|-------------|
| | Yellow | White | Total | Yellow | White | Total |
| 1989/90 | 3 | 0 | 3 | 424 | 843 | 1267 |
| 1990/91 | 0 | 0 | 0 | 242 | 947 | 1189 |
| 1991/92 | 342 | 0 | 342 | 232 | 725 | 957 |
| 1992/93 | 3949 | 0 | 3949 | 60 | 397 | 457 |
| 1993/94 | 63 | 0 | 63 | 959 | 727 | 1686 |
| 1994/95 | 0 | 0 | 0 | 1574 | 1156 | 2730 |
| 1995/96 | 372 | 747 | 1119 | 301 | 294 | 595 |
| 1996/97 | 51 | 88 | 139 | 445 | 838 | 1283 |
| 1997/98 | 104 | 5 | 109 | 1002 | 947 | 1949 |
| 1998/99 | 98 | 0 | 98 | 334 | 513 | 847 |
| 1999/00 | 569 | 0 | 569 | 374 | 609 | 983 |
| 2000/01 | 0 | 0 | 0 | 842 | 1273 | 2115 |
| 2001/02 | 348 | 47 | 395 | 643 | 559 | 1202 |
| 2002/03 | 651 | 274 | 925 | 992 | 1718 | 2710 |
| 2003/04 | 408 | 33 | 441 | 501 | 2123 | 2624 |
| 2004/05 | 219 | 0 | 219 | 746 | 2402 | 3148 |
| 2005/06 | 360 | 0 | 360 | 868 | 2301 | 3169 |
| 2006/07 | 960 | 1 | 931 | 440 | 163 | 603 |

source: SAGIS

From this table it is clear that following periods of drought within the region where declining stocks lead to shortfalls in the following marketing years (1992/93; 1995/96; and 2006/07 marketing years), we see significant increases in the importation of maize grain. Important to note, 2002/03 marketing year despite a normal harvest, significant volumes of white and yellow maize were imported. The primary factors that influenced the decision-making behavior of market participants include political instability within Zimbabwe, SAFEX spot prices trading above import parity levels for short periods of time, failing crops within the SADC region and the SADC food scare.

Overall, the extensive trade reforms have had a positive impact on the balance of trade in terms of maize grain and products. Figure 2 depicts the movement in net export volumes of maize grain and products.

**Figure 2. Net Exports of Maize Grain and Maize Meal: South Africa: 1979/80 to 2006/07
(‘000 MT)**



Source: SAGIS, <http://www.sagis.org.za/>

In general, from this graph it is clear that South Africa’s maize grain sector generates a trade surplus in terms of maize grain and products. It is only in years of drought, that a maize deficit occurs (marketing years 83/84, 92/93, 95/96 and 2006/07). However, despite maintaining a trade surplus, net export volumes have been decreasing at an average rate of 60,035 metric tons a year throughout the observation period. When the period is divided into a pre-reform (1979/80 to 1996/97) and post-reform (1996/97 to 2006/2007) periods, the rate of decline in net exports vary significantly. In the pre-reform period, net exports decline on average by 99,809 tons per year, compared to 51,000 tons per year in the post-reform period. Indicating, that the rate of decline in net export volume has slowed following full market deregulation and trade policy reform. This reduction in the rate of decline in net export can be largely attributed to two factors, namely; improved technology and changing consumption patterns. The transition from a controlled marketing to an increasingly free-market system made it imperative that domestic producer adopt improved technology as well as farming practices in order to remain competitive. To accomplish this, the practice of planting to marginal land stopped while there was a significant increase in the maize area planted under irrigation. In the 1980’s the total area of maize planted was approximately 4 million hectares; this decreased to less than 3 million hectares by the late 1990’s. However, despite the decline in area planted, production remained relatively constant (and even increased) while average maize production became relatively more stable. For example; in the 1991/92 drought, average yield was 1.07 mt/ha while in the most recent drought

in 1996/97 marketing year, average yield was 2.6 mt/ha. Given increased yields and a slight decline in human consumption of maize within recent years, the rate of decline in net exports of maize has slowed, as we move from the pre-reform to the post-reform period.

V. Price Determination

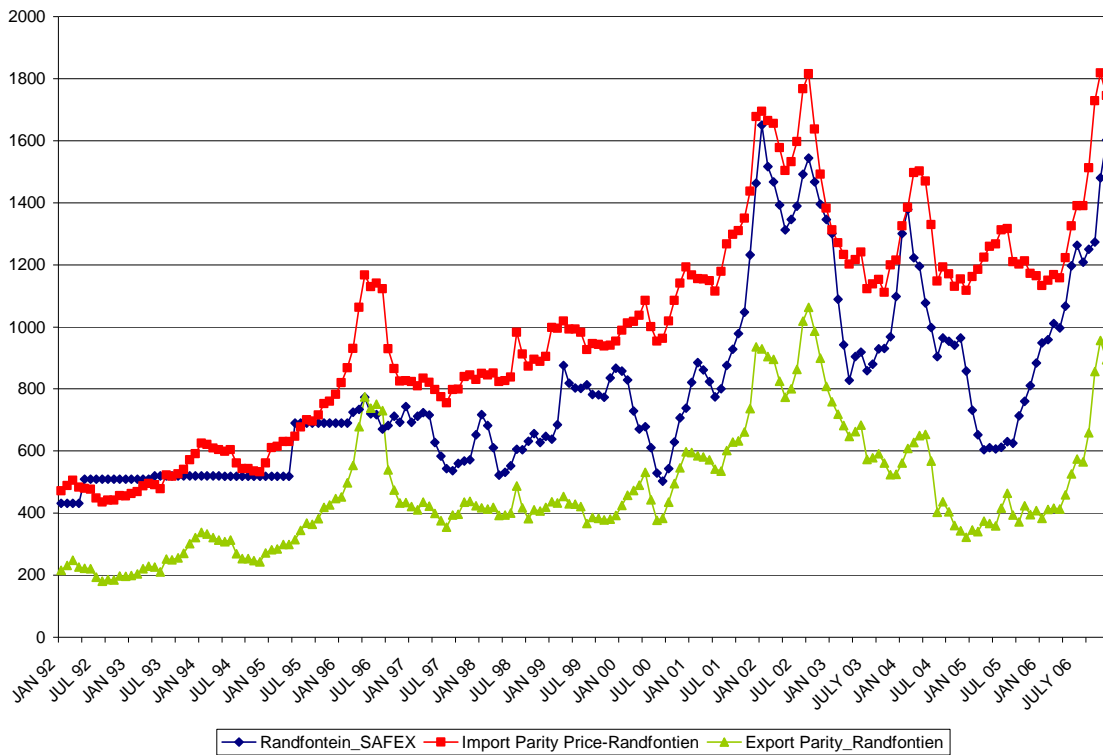
According to the law of one price, within two integrated markets, the difference in prices should exactly equal the transactions costs of moving the goods between those markets in the long-run. (Goodwin et. al.,1990). When this does not hold true in the short-run, there exists an opportunity for arbitrage which eventually causes the two prices to converge. Within the South African grain market, domestic prices generally move between import and export parity. During seasons of shortages, domestic prices tend to move closer to import parity prices for the full season, while surplus seasons see domestic prices tending towards export parity (Meyer et. al., 2006).

Figure 3 and 4 below illustrates domestic price movements for yellow and white maize grain between 1992 and 2006; respectively. In general, white maize prices are derived from the international price for yellow maize due to the substitutability of white by yellow maize. However, white maize prices are usual quoted at a premium over yellow maize prices due to the added cost of careful grading and handling associated with white maize. From figures 3 and 4 we see that equilibrium pricing conditions for maize within South Africa fluctuated between three trade regimes. These include, import parity, export parity and near-autarky. Important to note, between January 1992 and January 1996, domestic prices for both yellow and white were set by the Maize Board and tended towards import parity pricing.

From these figures it is clear that yellow maize grain tends to trade at domestic prices closer to import parity rather than export parity. The reason for this lies with the fact that large animal feed mills are located close to the Durban harbor, and it is often cheaper to import yellow maize than to transport it from inland production areas.

In the case of both yellow and white maize, within 2000, 2003 and 2005 seasons, both commodities traded close to export parity prices. The high level of exports was induced by bumper crop in the 2000, 2002 and 2005 production seasons. In contrast, during the 2001/2002 and 2003/2004 seasons, domestic prices tended towards import parity, and in the case of the white maize, exceeded import parity prices in 2002. For the 2001/2002 seasons, the combined fact of anticipated drought within the region and Zimbabwe's internal conflicts, lead to increasing domestic prices. During this period, a private trader is reported to have bought-up a majority of the maize grain within the South African market, which further exacerbated domestic prices (Meyer, 2008).

Figure 3. Import, Export and Domestic Nominal Price Movements for Yellow Maize: 1992 to 2006 (R/mt)

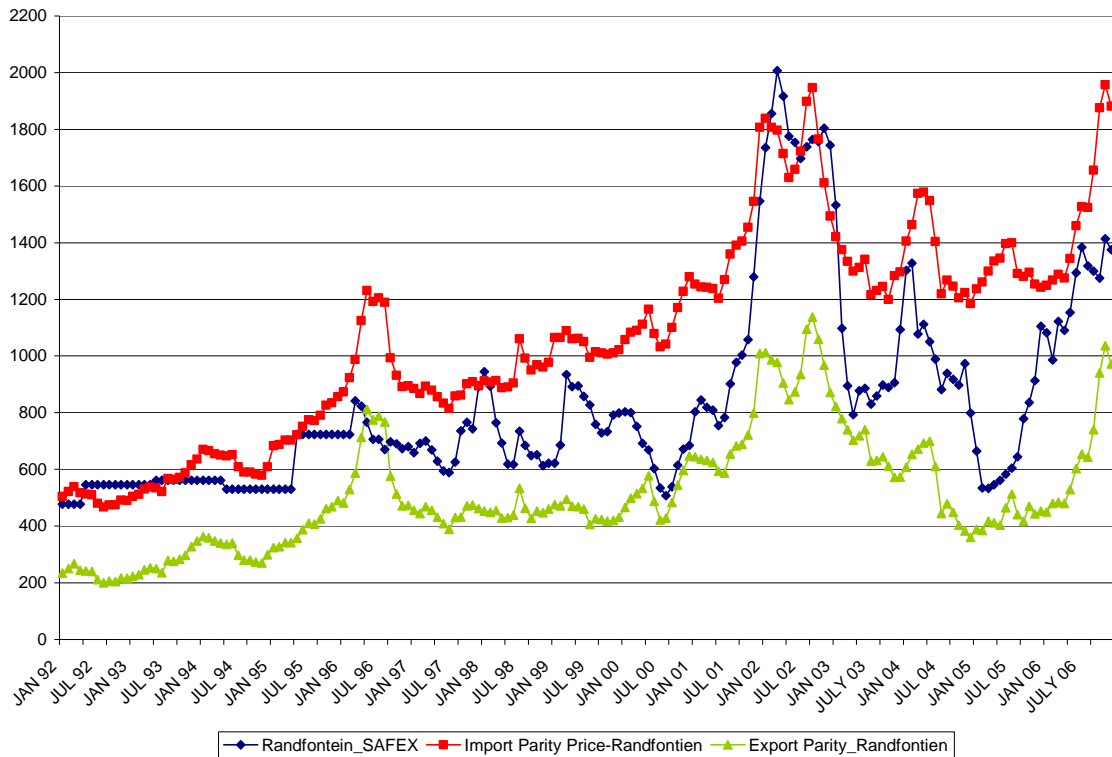


Overall, for a number of periods, equilibrium within the domestic market was established between import and export parity price levels indicating a near-autarkic market regime. According to theory, under autarky, market prices are determined by domestic supply and demand conditions and trade does not occur since domestic prices do not reach levels that would trigger arbitrage. However, in the case of South Africa, trade did occur during these periods, implying a type of regional or near-autarky market regime. The rationale underlying this “near” autarky condition is that trade within the Southern African region is largely driven by regional issues like staple food security, adverse weather conditions, quality concerns and to a lesser extent by arbitrage opportunities (Meyer et. al., 2006; Crichton, 2008).

VI. Conclusion

South Africa’s domestic and trade policy interventions that affect stakeholders along the maize supply chain are compatible in that they enable South Africa to meet its international trade agreement obligations. For instance, with the enforcement of the Marketing of Agricultural Products Act, No 47 of 1997, price controls along the maize supply chains were removed; export subsidies abolished; and a system of tariff rate quotas replaced import and export licenses as well as quotas for maize. In order to implement these trade reforms, key institutions were established or restructured. These include:

Figure 4. Import, Export and Domestic Nominal Price Movements for White Maize: 1992 to 2006 (R/mt)



1. International Trade Administration Committees (ITAC): established under the International Trade Administration Act of 2003. This committee replaced the Board of Tariffs & Trade (BTT) as the tariff body for SACU. Its primary function includes calculation and/or structuring of current tariffs as well as the promulgation of anti-dumping regulations.
2. Directorate: Food Safety & Quality Assurance: this unit is within the Department of Agriculture and is responsible for standardizing quality norms for grains and grains products for both domestic and export markets as well as regulating and administering chemicals used within the grain sector.
3. Directorate: South African Agricultural Food, Quarantine and Inspection Services: this unit within the Department of Agriculture is responsible for enforcing the application and adherence to the quality standards set by the Food Safety and Quality Assurance Directorate within the domestic market.
4. Perishable Products Export Control Board (PPECB): this assignee of the Department of Agriculture is responsible for the inspection of grains intended for export markets as well as the enforcement of standards regarding Food Hygiene and Food Safety of Regulated Agricultural Food Products of Plant Origin. The South African Agriculture Food Quarantine and Inspection Services audits the PPECB inspection activities.
5. Department of Agriculture: Division of Plant Health and Quality establishes phytosanitary standards for the grain sector.

6. Department of Health: responsible for administrating, compiling and publishing legislation relating to food safety of grain products sold locally and/or imported into the country.

Overall, these reform measures are consistent with allowances available to the grain sector under the World Trade Organization's Agreement on Agriculture (AoA).

However, despite the consistency between the domestic and trade policy interventions within the maize supply chain, this alone is not enough to achieve the sector-level development goals as set out in the Strategic Plan for South African Agriculture (2001) and The Strategic Plan for the South African Grain Industry (SAGIS, 2005). Following the process of aggressive market reform, South African agriculture finds itself in a position where only a few mechanisms are left through which the industry can be supported.

In order for the grain sector to meet its development objectives the disjoint between aggressive market reform and the government's commitment to black economic empowerment, land reform and accelerated growth needs to be addressed. In its application of market reform government failed to recognize the inherent dualism within the grain industry. This dualism results in the existents of two categories of market participants; namely, newly emerging black entrepreneurs and established large-scale commercialized participants. These two groups, within the reform context, face different requirements in order to achieve competitiveness and profitability. Given the extensiveness of the reform process, there remain very few intervention and support mechanisms, which can be utilized to support the informal and newly emerging commercial segment of the staple grain industries (Sandrey and Vink, 2006).

REFERENCES

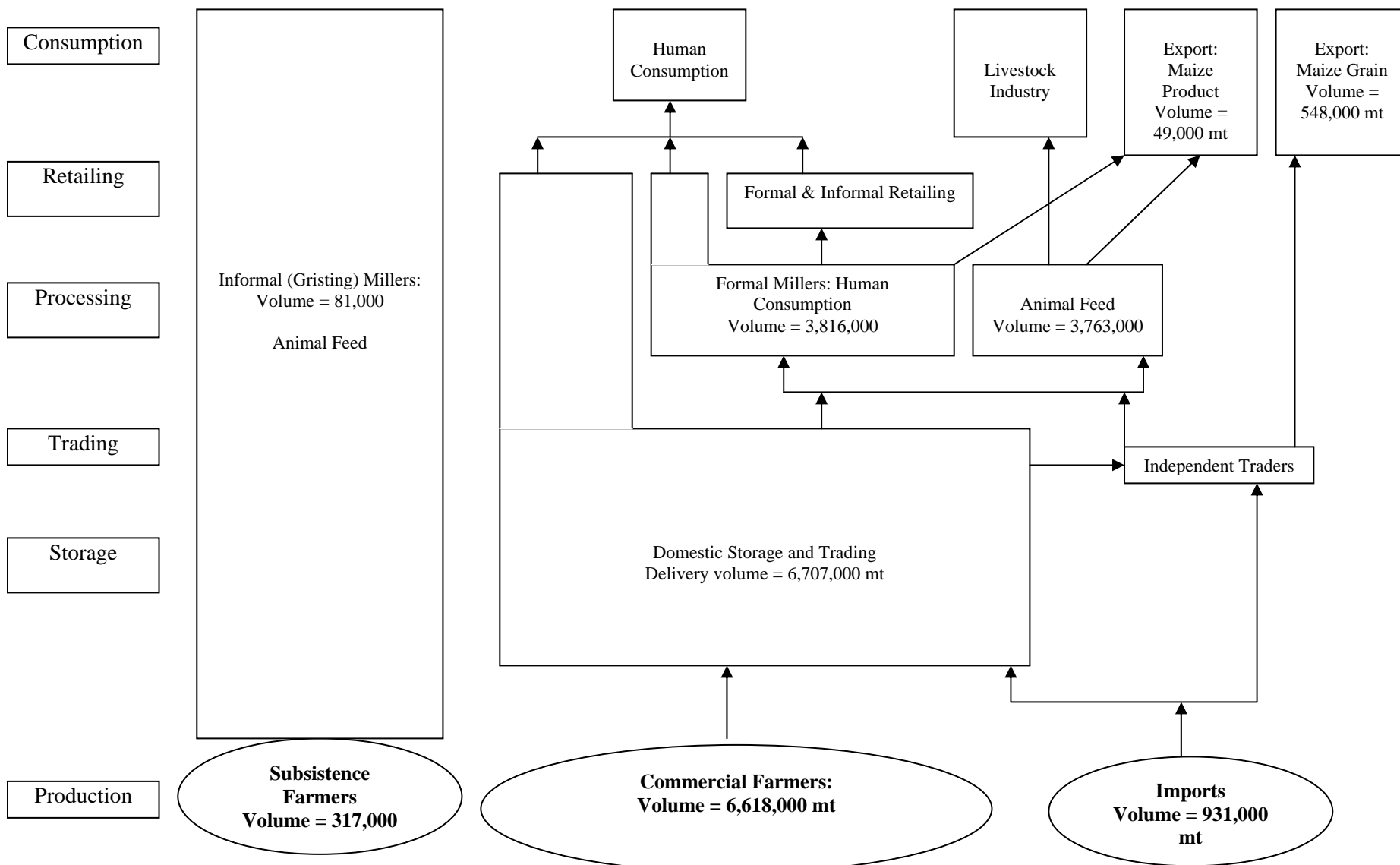
- Achterberg, R and Hartzenberg, T. (2002). "Trade in distribution Services in South Africa." Trade and Industrial Policy Strategies. Annual Forum; Muldersdrift, South Africa.
- Agricultural Writers Association of South Africa, 2000. Farming Industries in South Africa. <http://www.agriwriters.org.za/>
- Bertelsman-Scott, T., and Draper, P., ed. (2004). The TDCA: Impacts, Lessons and Perspectives for EU-South and Southern African Relations. Report on the SAIIA Conference, Johannesburg, South Africa.
- Bureau of Food and Agricultural Policy, (2007). Baseline: June 2007. University of Pretoria, Pretoria, South Africa.
- Business Day (2005). Foreign Wheat Entering South Africa Threatens Local Producers. tralac, Stellenbosch, South Africa.
- Crichton, James. (2008). Personal Interview. Executive Director: Domestic, Southern Alliance Agricultural commodity Trading House. Fourways, South Africa.
- Department of Trade and Industry, (200). <http://www.thedti.gov.za>
- de Swardt, C. (2003). Unraveling Chronic Poverty in South Africa: Food for Thought. Conference Paper, Chronic Poverty and Research Center, University of Manchester, United Kingdom
- de Villers, J. and Moloitsane, P.J. (2003). Food Security Public Hearing Portfolio Committee on Agriculture. Presentation made by National Chamber of Milling.
- Draper, P., (2003). To Liberalise or Not to Liberalise? A Review of the South African Government's Trade Policy. South African Institute of International Affairs Trade (SAIIA) Report No. 1, Johannesburg, South Africa.
- Essinger, S., Hill, L. D., Laubscher, J. M., 1998. Privatization Progress in the South African Maize Industry. Staff Paper, Urbana-Champaign, University of Illinois.
- Fews Net, 2005. Zambia: Food Security Update. http://www.fews.net/docs/Publications/ZAMBIA_200507en.pdf
- Food and Agriculture Organization of the United Nations (FAO), 2005. Fertilizer Use by Crop in South Africa. Natural Resources Management and Environment Department. Rome, Italy.

- Goodwin, B.K., T.J. grennes, and M.K. Wohlgenant (1990). A Revised Test of the Law of One Price Using Rational Price Expectations. *American Journal of Agricultural Economics*, Vol. 72.
- GWK, 2007. Website: <http://www.gwk.co.za>
- Hochfeld, S. (2007). Personal Interview. Managing Director, Hochfeld Grains (Pty) Limited. Johannesburg, South Africa.
- Hochfeld Grains (2008). Website: <http://www.hochfeld.co.za>
- International Trade Administration Commission of South Africa, (2007). “Report No. 235: Review of the customs tariff dispensation on maize, maize flour and downstream products thereof”. ITAC, Pretoria.
- Kirsten, J., Edwards, L., and Vink, N., (2006). Distortions to Agricultural Incentives in South Africa. World Bank Agricultural Distortions Research Project Working Paper.
- Le Clus, K., 2004. Personal Interview. Department of Agricultural Economics, University of the Free State, Bloemfontein, South Africa.
- Meyer, F., 2006. Model Closure and Price Formation Under Switching Grain Market Regimes in South Africa. Ph.D. Dissertation. Department of Agricultural Economics, Extension, and Rural Development, University of Pretoria, South Africa.
- Meyer, F., P. Strauss, 2005. An Alternative Tariff Dispensation for the South African White and Yellow Maize Industry. Bureau of Food and Agricultural Policy (BFAP), University of Pretoria, South Africa.
- Meyer, F., P. Westhoff, J. Binfield, J.F. Kiersten, (2006). Model Closure and Price Formation Under Switching Grain Market Regimes in South Africa. *Agrekon*, Vol. 45, No. 4.
- Mlambo-Ngcuka, P., (2006). A Catalyst for Accelerated and Shared Growth-South Africa (ASGISA). Media Briefing by Deputy President, Pretoria, South Africa.
- National Department of Agriculture (NDA), 2006. Abstracts of Agriculture. Government of South Africa, Pretoria.
- National Department of Agriculture (NDA), 2008 Maize Industry: Situational Analysis, Market Indicators and Outlook Look for 2008. Kimberly, South Africa.
- National Agricultural Marketing Council (NAMC), 2004. Final Report of the Food Pricing Monitoring committee. Pretoria, South Africa.
- Ntloedibe, M. (2001). “Republic of South Africa Retail Food Sector Report.” GAIN

- Report. USDA-FAS; Pretoria South Africa.
- Organization for Economic Co-operation and Development (OECD), 2006. African Economic Outlook 2005-2006. www.oecd.org/dev/publications/africanoutlook, Paris, France.
- OECD Observer, (2006). Policy Brief: Agricultural Policy Reform in South Africa. Paris, France.
- OECD Review of Agricultural Policies, (2006). South Africa: Highlights and Policy Recommendations. Paris, France.
- Robert E. C., Robert, E., and van de Brink, R. (1994). "South African Agriculture: Structure, Performance and Options for the Future". Discussion Paper. World Bank. Washington, D.C.
- Sandrey, R. and Vink, N. (2006). How can South Africa Exploit New Opportunities in Agricultural Export Markets? Lessons from the New Zealand Experience. tralac Working Paper, No. 19, Stellenbosch, South Africa.
- South African Grain Information Services (SAGIS), 2005. The Strategic Plan for the South African Grain Industry. www.sagis.org.za/Flatpages/GRAIN%20STRATEGY%20FINAL%202005090%20dokument.pdf, Pretoria, South Africa.
- South African National Department of Agriculture (2006). The Strategic Plan for South African Agriculture. <http://www.nda.agric.za/docs/sectorplan/sectorplanE.htm>, Johannesburg, South Africa.
- Stern, M., and Netshitomboni, N. (2004). AGOA, Africa and Agriculture: South Africa's Experience. SAIIA Trade Report No. 3, Johannesburg, South Africa.
- Thirtle, C., van Zyl, J., and Vink, N., Ed. (2000). "South African Agriculture at the Crossroads: An Empirical Analysis of Efficiency, Technology and Productivity". St. Martin's Press, LLC. New York, NY.
- van Dijck, G., and Otto, R.J. (1995). "Restructuring of Agriculture Marketing Policy in South Africa." *Agrekon*. Vol 34(4): 205-210.
- van Rooyen, C.J., Ngqangweni, S., and Frost, D. (1997). "Some Considerations for a South African Food Policy." *Agrekon*. Vol. 34(4): 301-308.
- Watkinson, E., Makgetla, N., 2002. South Africa's Food Security Crisis. National Labour & Economic Development Institute (NALEDI), Pretoria, South Africa.
- World Bank Group, (2007). <http://www.worldbankgroup.org/>

ANNEX A-1

Value Chain Map: South African Maize Subsector: 2006/07 Marketing Year



Annex 2.

Kenya Maize Trade Country Profile

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Acknowledgements: Funding for this research was provided by Michigan State University under World Bank Project No. No. 7144132 *Strengthening Food Security in Sub-Saharan Africa through Trade Liberalization and Regional Integration* .

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1.1 Annual Maize Balances 1990 to 2006

1.1.1 Production

Maize area in Kenya has increased gradually from about 1.38 million hectares in 1990 to about 1.89 million hectares in 2006. Production has however varied between years depending on the amount of rainfall recorded, as maize is largely rain fed. Nevertheless, maize production has recorded an upward trend from about 2.25 million tonnes in 1990 to a high of 3.25 million tonnes in 2006. Maize yields over the period average about 1.7 tonnes per hectare or 18.6 bags per hectare. This has also varied from as low as 1.3 tonnes per hectare in 2004 when there was a drought to a high of 2.0 tonnes per hectare in 1994. Maize area, production and yields are shown in Table 1.

Table 1: Maize Area, Output and Yields

| Year | Ha | MT | 90 kg Bags | Bags/Ha | MT./Ha |
|------|-----------|-----------|------------|---------|--------|
| 1990 | 1,380,000 | 2,250,000 | 25,000,000 | 18 | 2 |
| 1991 | 1,310,000 | 2,400,000 | 26,666,666 | 20 | 2 |
| 1992 | 1,407,000 | 2,430,000 | 27,000,000 | 19 | 2 |
| 1993 | 1,343,500 | 1,755,000 | 19,500,000 | 15 | 1 |
| 1994 | 1,500,000 | 3,060,000 | 34,000,000 | 23 | 2 |
| 1995 | 1,438,740 | 2,698,863 | 29,987,368 | 21 | 2 |
| 1996 | 1,489,000 | 2,160,000 | 24,000,000 | 16 | 2 |
| 1997 | 1,504,820 | 2,214,000 | 24,600,000 | 16 | 2 |
| 1998 | 1,475,740 | 2,464,101 | 27,378,898 | 19 | 2 |
| 1999 | 1,567,244 | 2,322,136 | 25,801,511 | 17 | 2 |
| 2000 | 1,500,000 | 2,160,000 | 24,000,000 | 16 | 1 |
| 2001 | 1,640,008 | 2,790,000 | 31,000,000 | 19 | 2 |
| 2002 | 1,992,315 | 2,411,007 | 26,788,967 | 17 | 2 |
| 2003 | 1,670,914 | 2,713,561 | 30,150,678 | 18 | 2 |
| 2004 | 1,819,817 | 2,454,930 | 27,277,000 | 15 | 1 |
| 2005 | 1,760,618 | 2,918,157 | 32,423,967 | 18 | 2 |
| 2006 | 1,888,185 | 3,247,777 | 36,086,411 | 19 | 2 |

Source: Ministry of Agriculture, Republic of Kenya

1.2 Imports, Exports and Procurements by NCPB

Most of the maize imports take place from the neighboring countries of Uganda, Ethiopia and Tanzania. In deficit years, maize in the past was imported from South Africa and Argentina, which are the key sources of white maize that is commonly consumed in Kenya. Purchases and sales by the National Cereal and Produce Board (NCPB) were high in early 1990's and reached its highest level of about 500,000 tonnes in 1994. However, maize marketing reform was intensified in 1994 when the NCPB purchases dropped dramatically. Activities in the maize marketing by NCPB intensified after 2002. Since then, maize purchase by NCPB has been higher than maize sales (Table 2).

Table 2: Maize Output, NCPB Purchase, Sales, Official Imports and Exports

| Year | Output 000' MT | NCPB Purchase 000' MT | NCPB Sales 000' MT | Official Export in MT | Official Imports in MT | Food Aid 000' Mt |
|------|-------------------|-----------------------------|-----------------------|-----------------------------|------------------------------|---------------------|
| 1990 | 2,250 | 233 | 663 | 160 | 0 | 78 |
| 1991 | 2,400 | 316 | 728 | 18.7 | 0 | 181 |
| 1992 | 2,430 | 488 | 255 | 0.4 | 389 | 282 |
| 1993 | 1,755 | 463 | 508 | 0 | 80 | 262 |
| 1994 | 3,060 | 535 | 67 | 0.1 | 451 | 109 |
| 1995 | 2,699 | 100 | 110 | 1.7 | 12.7 | 22 |
| 1996 | 2,160 | 62 | 54 | 154.3 | 0.8 | 48 |
| 1997 | 2,214 | 150 | 14 | 221.5 | 1,077 | 102 |
| 1998 | 2,464 | 35 | 122 | 263.7 | 367 | 77 |
| 1999 | 2,322 | 175 | 144 | 9.1 | 73 | 116 |
| 2000 | 2,160 | 308 | 73 | 40.5 | 397 | 349 |
| 2001 | 2,790 | 255 | 23 | 0.5 | 279 | 132 |
| 2002 | 2,411 | 88 | 194 | 0.4 | 17 | 94 |
| 2003 | 2,714 | 160 | 135 | 15.9 | 107 | 62 |
| 2004 | 2,455 | 102 | 28 | 3.1 | 230 | 124 |
| 2005 | 2,918 | 311 | 143 | 24.1 | 50 | 132 |
| 2006 | 3,248 | 134 | 372 | 10.9 | 73 | 112 |

Source: Ministry of Agriculture, FAO STAT and Authors compilation

It is thought that currently NCPB has between 400,000 to 450,000 tonnes in store. As far as the balance between imports and exports, Kenya's food deficit has been increasing therefore becoming more of a net importer than an exporter of maize. Food Aid is normally brought in through the Non Governmental Organizations (NGOs) particularly the World Food Program. The volume of imports varies with the weather. In 2003/2004 seasons, Kenya experienced a drought as a result of which the imports were higher. There was also another drought in 2000 and El Nino floods in 1997. In these years, the volume of food aid went up to 349 tonnes.

1.3 Wholesale Prices for Kitale and Nakuru Markets

The local real prices of food commodities have declined (Table 3). Prices were higher during the pre-liberalization period. However, real wholesale maize prices have declined in the two main markets in the maize basket zones in Kenya. There is insignificant price differential between maize prices in the two wholesale markets.

Table 3: Real Wholesale Maize Prices in Ksh. per 90 kg Bag

| Year | Kitale | Nakuru |
|------|--------|--------|
| 1990 | 1,847 | 1,642 |
| 1991 | 2,077 | 1,946 |
| 1992 | 3,572 | 2,794 |
| 1993 | 2,631 | 2,839 |
| 1994 | 2,557 | 2,938 |
| 1995 | 1,421 | 1,675 |
| 1996 | 1,126 | 1,290 |
| 1997 | 2,198 | 2,277 |
| 1998 | 2,108 | 2,193 |
| 1999 | 1,923 | 1,703 |
| 2000 | 1,824 | 2,151 |
| 2001 | 1,449 | 1,912 |
| 2002 | 891 | 1,215 |
| 2003 | 1,146 | 1,459 |
| 2004 | 1,739 | 1,582 |

Source: Ministry of Agriculture. See detailed monthly prices (Appendix 1)

2.0 Major Maize Flow

In Kenya, maize is harvested in two distinct seasons. During the June-July period, maize is normally harvested from Loitoktok on the Kenya-Tanzania border, Bomet around Kericho and in the Trans Mara region. This is also the main harvest in Northern Tanzania. The main maize harvest in Central and Northern Rift occurs around November to December. During these times, maize is harvested in areas such as Nakuru, Eldoret, Kitale, Nandi, Lugari, Bungoma and Kakamega.

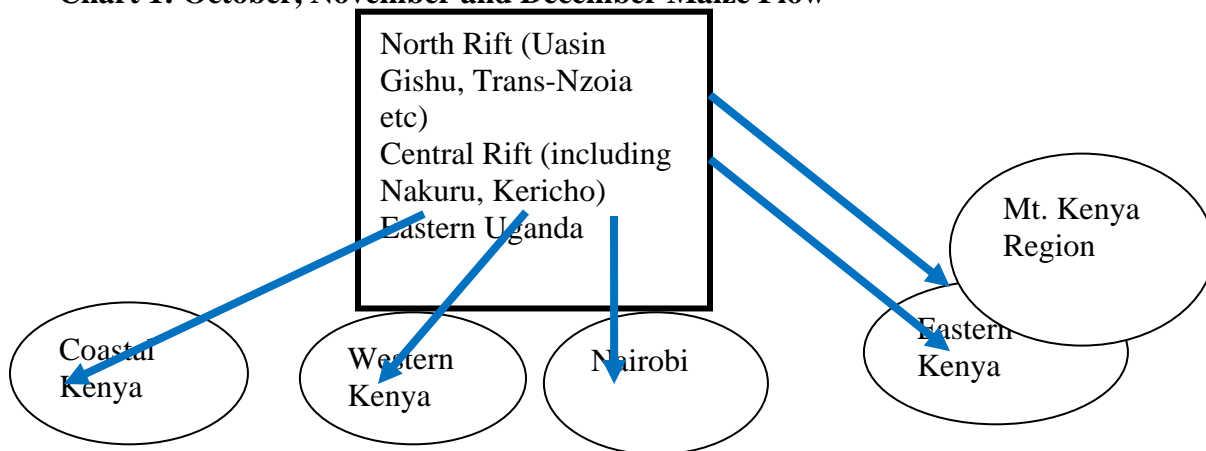
2.1 Maize Flows during Normal Harvest Years

During the normal harvest years maize normally flows from the maize surplus zones of the Central Rift (Nakuru, Rongai, Narok areas) and the Northern Rift (Eldoret, Kitale, Nandi) and also from Eastern Uganda from area such as Kapchorwa and Mbale. Maize from these three areas flows to areas around Lake Victoria the Nyanza basin including Kisumu, Siaya, Bondo, Eastern Rift valley in areas such as Naivasha, Nairobi to the Eastern and North Eastern part of the country to cover areas such as Machakos, Kitui, Mwingi, Wajir and Marsabit. Maize from Nakuru and Kitale would also flow through Nyahururu to the central highlands around Mount Kenya to Nyeri, Karatina, Muranga, Thika and Kiambu. Maize from the surplus regions also flow to as far as the coastal towns of Mombasa, Kwale, Kilifi and Malindi. The central highlands

mainly specialize in the production of traditional and non traditional export and dairy enterprises. During these times, maize also enters Tanzania through Isebania on the Kenya-Tanzania border to cover the deficits created after sales in the June-July period.

In the months of May and June/July when the first maize crop is ready from the surplus regions of Bomet, Narok, Trans Mara and Loitoktok, maize flows from these regions to the deficit regions in Nyanza, around the Mount Kenya region. During this period, some maize also flows from Tanzania after the long rains harvest to Eastern part of the country and coastal areas of Mombasa. The maize flowing to Kenya enters Kenya through Namanga and Loitoktok. The flow of maize to the country at this time is very helpful because it comes at the period when Kenya's maize stocks are very low and prices are high. Incidentally, maize from Bomet and Trans Mara flows to maize surplus regions such, as Bungoma, Kakamega and sometimes Eldoret because these are times when some maize sellers are also buying from the market for their own consumption. There are insignificant maize imports from Ethiopia to the border towns like Moyale.

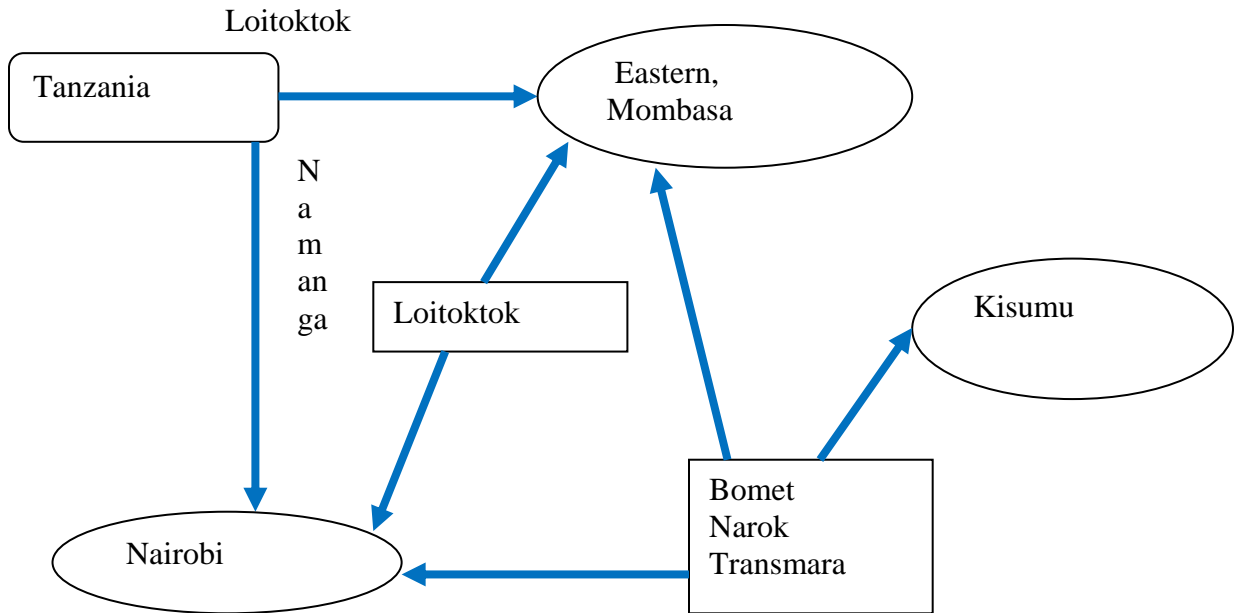
Chart 1: October, November and December Maize Flow



2.2 Maize flow during the Bumper Harvest Year

Maize flow during the bumper harvest years is similar to that in normal years except the demand for maize in the otherwise normally food deficit regions is reduced with most of the maize held in stocks in the surplus region. For example, in a surplus year, the demand for maize imports drops around Mount Kenya region as households shifts to other non maize foods types such as potatoes, bananas among others. The demand also in the Eastern part of the country drops but follows the same patterns with reduced maize quantities imported.

Chart 2: May/June/July harvest (Maize Flow)



2.3 Maize Flow in the Drought Year

In the drought years in Kenya, the demand for maize across the country is very high. Immediately after the harvest, maize bought by traders is transported to the key deficit regions in the Nyanza region (Kisumu, Siaya and Bondo). Maize also moves through Nakuru to Nairobi and areas surrounding Mount Kenya. If the drought is not widespread to other Eastern African Countries, maize is available from Uganda which supplements that from the surplus regions of Northern Rift. From as far as Tanzania the available maize finds its way to the Eastern, North Eastern and coastal regions. However, these regions are best served by imported maize mainly from South Africa although, in some cases maize has imported from as far as Argentina. The imported maize is also consumed in Nairobi and the surrounding areas.

3.0 Policies affecting Cross Border Maize Trade

3.1 Tariffs

Kenya is a member of Common Market for Eastern and Southern Africa (COMESA), East African Community (EAC) and World Trade Organization (WTO), which has direct bearings on the maize trade policy. The commitments under these protocols limit the country from making unilateral policy decisions on maize trade. COMESA Free Trade Agreement (FTA) protocol allows maize from member countries to enter the Kenyan market duty free. Kenyan maize exports to these countries are also granted duty free status as long as it is accompanied with certificates of origin. For other Non FTA countries, Kenya is bound by the COMESA trade protocol not to charge any duty on imported maize from the COMESA member states. However imports from countries outside COMESA such as South Africa are charged a 35% normal duty for imports into Kenya. These taxes can nevertheless be lifted by the Minister for Agriculture to enable entry of maize into the country during times of huge deficits as is happening now where maize imports from South Africa will be done free of any excise duty. In other commodities such as wheat and wheat products, Kenya has been granted a safeguard to charge an excise duty of 35% on imported wheat and a 60% excise duty on processed wheat flour from COMESA member countries. This imposition of duties are however sanctioned under COMESA's safeguards clause which has a fixed time limit. The safeguard although penalizing consumers is expected to protect the domestic wheat industry as it adjusts for competition after the safeguard period. Under the EAC trade regime, Kenya grants market access to maize from Uganda and Tanzania at no tax or tariff. Maize from these countries is supposed therefore to enter Kenya duty free.

3.2 Non-Tariff Requirements

Maize imports must be accompanied by certain custom requirements, which in some instances act as non-tariff barrier to maize trade to and from Kenya. One such requirement is the form C63. This form discriminates against small and medium enterprises and individuals who may not have been registered for income tax. To clear the goods at the port of entry, the tax authorities require that the trader use a clearing agent. This requirement is also a disadvantage to the small traders because this is an extra expense that reduces the trader's profit margin. Charges by the clearing agents range between 1.5% and 2% of the Cost Insurance and Freight (CIF) price.

Maize imports to Kenya are entered into the Import Declaration Form (IDF) that attracts a fee of 2.75%. An advance of Ksh 5,000 is paid when making the declaration for imports. Another requirement for the maize imports to Kenya is the Pre-Shipment Inspection (PSI). This involves verification of quality, price and customs classification of goods to be imported. The principal aim of these documents is to mitigate against loss of custom revenue as a result of under invoiced imports. The Kenya Subsidiary Legislation 2001 outlines the items to be subjected to the pre shipment inspection.

3.3 Phyto-Sanitary Measures

According to the Kenya Plant Health Inspectorate Services (KEPHIS) maize imports are subjected to quarantine regulations. Importers are therefore required to obtain an import permit before importation. The following conditions are stipulated in the import permit.

- A Phyto-sanitary Certificate accompanying the maize imports
- Fumigation declaration in the certificate before dispatch
- Absence of certain insect pests
- Indications that the materials are not Genetically Modified Organisms (GMO)

3.4 Quality Standards

Maize imports and exports are expected to meet certain quality standards. The inspection for quality is done at the port of entry. The quality requirements are specified in table 4.

Table 4: Quality Standards by the Kenya Bureau of Standards

| Factor | Maximum level in % |
|-----------------------------------|--------------------|
| Moisture content | 13.5 |
| Foreign matters | 1 |
| Broken grain | 2 |
| Insect damage grain | 3 |
| Rotten, diseased and discolored | 4 |
| Other colored grains | 2 |
| Free from live insect infestation | |
| Aflatoxin | Nil (10ppb) |

3.5 Health Standards

Maize imports and exports are also subjected to inspection to ensure that it meets certain prescribed safety standards. This includes a moisture content of 13.5%, Aflatoxin levels of 10ppb and testing for radioactive materials. Other safety standards are similar to the quality standards tested by the Kenya Bureau of Standards (KEBS).

3.6 Maize Import and Export Parity

Kenya largely consumes white maize which has been imported from South Africa and Argentina in the past. At a Safex price (South Africa) of \$ 260 per tonne at an exchange rate of Ksh 66 to a US dollar and at freight charges of about US \$ 24 per tonne the Cost Insurance and Freight (CIF) for maize landed in Mombasa is US \$ 284 per tonne. When all the other relevant charges as shown in Table 5 are added including the import duty of 25% for the Non COMESA imports, the maize landed costs in Mombasa is US \$ 467 per tonne. Haulage costs to Nairobi is US \$ 33, which makes the landed costs of maize from South Africa duty paid to be US \$ 500 or Ksh 33,005 per tonne, this is equivalent to Ksh 2,970 per 90 kg bag. Without the 25% import duty, maize from South Africa lands in Nairobi at Ksh 28,319 or Ksh 2,549 per 90 kg bag. However, with maize from Argentina at US \$156 per tonne and freight charges of US \$ 50 per tonne the landed maize costs in

Nairobi is US \$ 329 or Ksh 23,758 per tonne, equivalent to Ksh 2,138 per 90 kg bag (Table 6). Without duty paid, the landed costs are US \$ 298 in Nairobi or Ksh 19,650 per tonne, which is Ksh 1,768 per 90 kg bag.

4.0 Export Parity Prices

Maize export parity price for maize produced in Kitale i.e. the main maize surplus region is shown in Table 6. Average maize production cost average between Ksh 800 to Ksh 1000 per 90 kg bag in Kitale, which is US \$ 134, and US \$ 150 per tonne. Maize wholesale price in Kitale is therefore about Ksh 1,100 per bag. To this is added the transport and handling costs that therefore makes wholesale maize price in Nairobi at Ksh 1,350 per bag (Ksh 15,000 per tonne or US \$ 227 per tonne). The computed export parity price ex-Nairobi is Ksh 765 per bag (Ksh 8500 per tonne or US \$ 19.8). This is quite low and shows that the Kenyan maize is not competitive in the world market.

Table 5: Import Parity Prices for Maize Ex –Durban March 2008

| | US \$/ton | Ksh/ton | Ksh/90 kg bag |
|----------------------------------|------------|---------------|---------------|
| FOB Durban | 260 | 17,160 | 1,544 |
| Exchange rate | 66 | | |
| Freight | 24 | 1,584 | 143 |
| C& F Mombasa | 284 | 18,744 | 1,687 |
| Insurance (1% C &F) | 2.8 | 187 | 17 |
| Import duty (25%) | 71 | 4,686 | 422 |
| IDF fees (2.25% C&F) | 7.1 | 469 | 42 |
| KPA handling charges | 28 | 1,848 | 166 |
| KARI (1% C& F) | 2.8 | 187 | 17 |
| Min. of Health (0.2% of C&F) | 57 | 3,749 | 337 |
| Bagging charges | 6.5 | 429 | 39 |
| Transport to warehouse | 3 | 198 | 18 |
| Storage and handling charges | 1.5 | 99 | 9 |
| Fumigation charges | 1.5 | 99 | 9 |
| Agency fees | 1 | 66 | 6 |
| Incidental charges | 1 | 66 | 6 |
| Landed into store Mombasa | 467 | 30,827 | 2,774 |
| Road haulage to Nairobi | 33 | 2,178 | 196 |
| Landed Nairobi with duty | 500 | 33,005 | 2,970 |

Source: Author's compilation

The differences between the import and export parity prices are high. It is US \$130 per tonne for maize from South Africa or us \$ 60 per tonne for maize imported from Argentina. This is accounted by the high domestic handling and transport costs which in this case is us \$ 33.7 to move a tonne of maize from Nairobi to Mombasa compared to

about US \$ 24 per tonne which is the freight charge between Durban South Africa and Mombasa. Domestic maize production costs are also higher than those from exporting countries thus making maize imports less favorable.

Details for the computation of trends in import and export parity prices are shown in Appendix 3. The import parity prices have been increasing and there has been a drastic increase in 2008. This increase is mainly associated with increase in freight charges and other port handling charges. The export parity prices have been less than the prevailing local prices. This is an indication that the local maize prices are high and uncompetitive with other world markets such as Durban. This implies that the cost of maize production in the country is higher compared to other maize growing countries.

Table 6: Import Parity Prices for Maize Ex - Argentina March 2008

| | US \$/ton | Ksh/ton | Ksh/90 kg bag |
|----------------------------------|------------|---------------|---------------|
| Buenos Aires | 156 | 10,296 | 927 |
| Exchange rate | 66 | | |
| Freight | 25 | 1,650 | 149 |
| C& F Mombasa | 181 | 11,946 | 1,075 |
| Insurance (1% C &F) | 1.8 | 119 | 11 |
| Import duty (25%) | 28 | 1,848 | 166 |
| IDF fees (2.25% C&F) | 4.525 | 299 | 27 |
| KPA handling charges | 28 | 1,848 | 166 |
| KARI (1% C& F) | 1.8 | 119 | 11 |
| Min. of Health (0.2% of C&F) | 36 | 2,389 | 215 |
| Bagging charges | 6.5 | 429 | 39 |
| Transport to warehouse | 3 | 198 | 18 |
| Storage and handling charges | 1.5 | 99 | 9 |
| Fumigation charges | 1.5 | 99 | 9 |
| Agency fees | 1 | 66 | 6 |
| Incidental charges | 1 | 66 | 6 |
| Landed into store Mombasa | 296 | 19,526 | 1,757 |
| Road haulage to Nairobi | 33 | 2,178 | 196 |
| Landed Nairobi with duty | 329 | 21,704 | 1,953 |

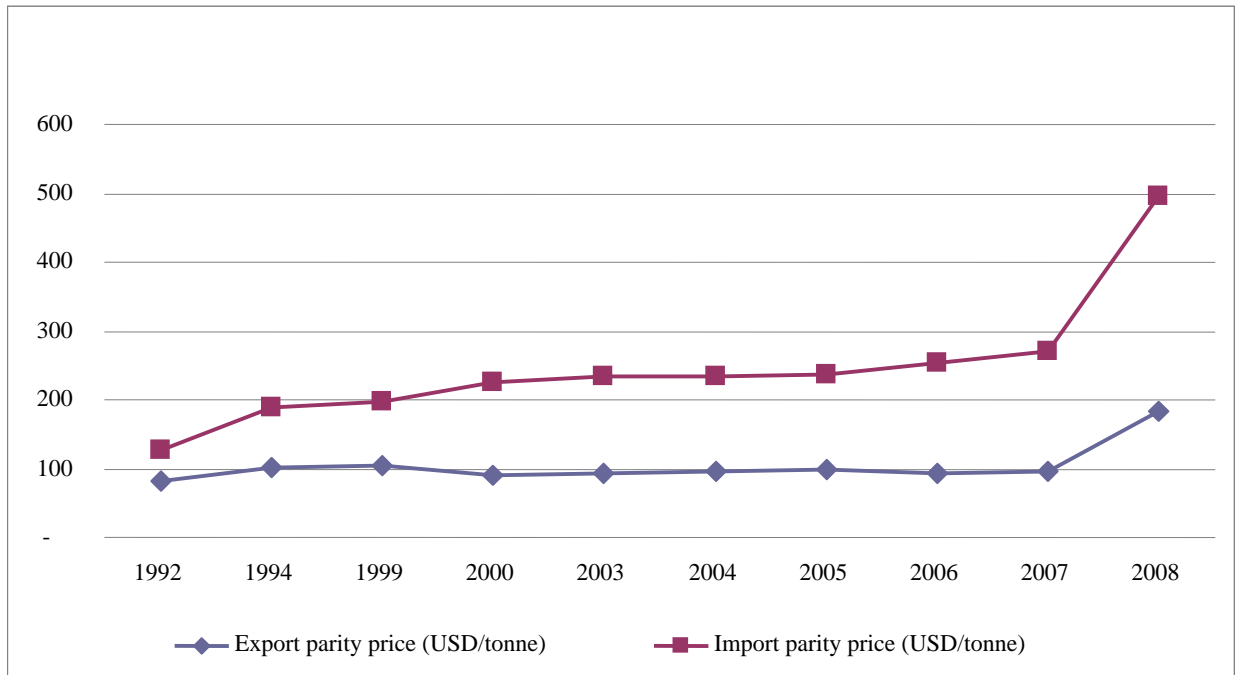
Source: Author's compilation

Table 7: Export Parity, March 2008

| Maize Export Price Ex –Nairobi | US | | |
|--------------------------------------|-------------|---------------|-----------------|
| | \$/ton | Ksh/ton | Ksh/90 kg bag |
| FOB Durban | 260 | 16,900 | 1,521 |
| Exchange rate | 65 | | |
| C & F | 284 | 18,460 | 1,661.40 |
| Freight | 24 | 1,560 | 140.4 |
| Insurance (1% C &F) | 2.8 | 182 | 16.4 |
| Import duty (25%) | 71 | 4,615 | 415.4 |
| IDF fees (2.25% C&F) | 7.1 | 20 | 1.8 |
| KPA handling charges | 28 | 78.4 | 7.1 |
| KARI (1% C& F) | 2.8 | 8 | 0.7 |
| Min. of Health (0.2% of C&F) | 57 | 1,596 | 143.6 |
| Bagging charges | 6.5 | 182 | 16.4 |
| Transport to warehouse | 3 | 84 | 7.6 |
| Storage and handling charges | 1.5 | 10 | 0.9 |
| Fumigation charges | 1.5 | 9.75 | 0.9 |
| Agency fees | 1 | 7 | 0.6 |
| Incidental charges | 1 | 2 | 0.1 |
| Road haulage to Nairobi | 33 | 49.5 | 4.5 |
| Total costs | 240.2 | 8,402 | 756.2 |
| Export parity price (Nairobi) | 19.8 | 8,498 | 765 |

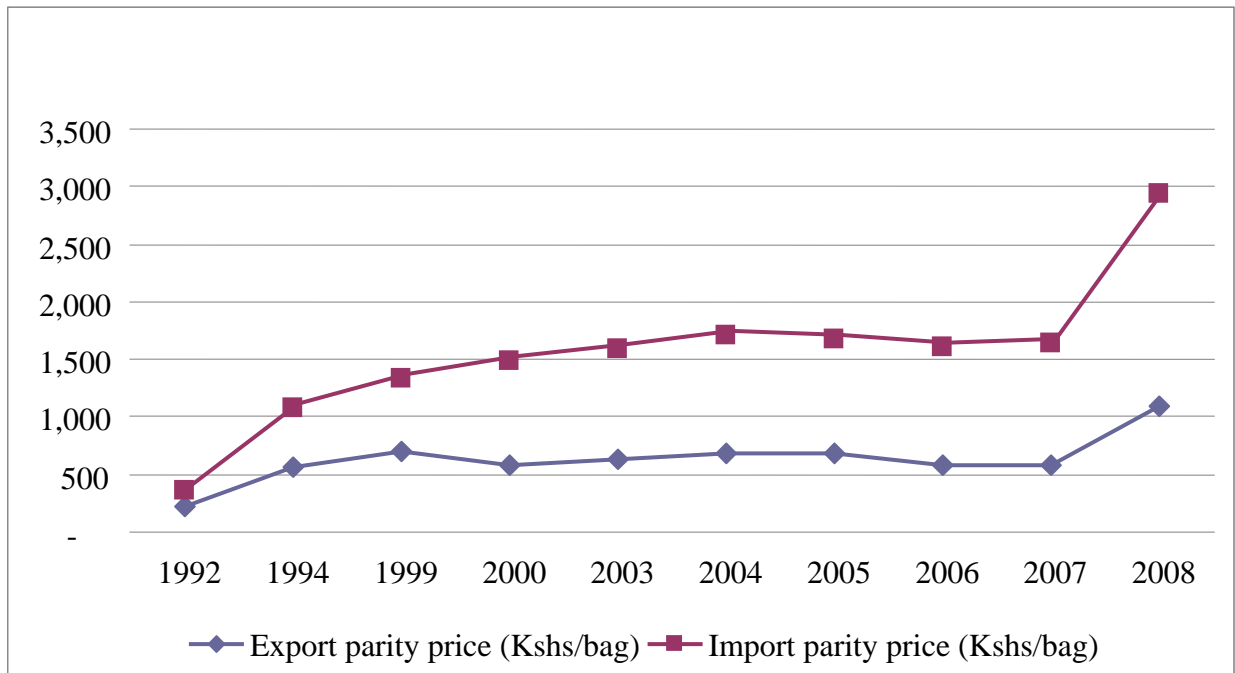
Source: Author's compilation

Figure 1: Import and Export Parity Prices in USD/tonne, 1992-2008



Source: OCEAN FREIGHT

Figure 2: Import and Export Parity Prices in Ksh/tonne, 1992-2008



Appendix 1: Wholesale Nominal Monthly Maize Prices per 90 kg bag, 1992-2008

| Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | |
|------------|-----------------|----------------|----------------|-----------------|------------|-----------------|----------------|----------------|-----------------|------------|-----------------|----------------|----------------|-----------------|------------|-----------------|----------------|----------------|--|
| 1992 | | | | | 1993 | | | | | 1994 | | | | | 1995 | | | | |
| Jan | 379 | 460 | 357 | 439 | Jan | 852 | 689 | 600 | 551 | Jan | 1,264 | 1,057 | 860 | 1,225 | Jan | 807 | 600 | 555 | |
| Feb | 482 | 587 | 455 | 560 | Feb | 807 | 725 | 595 | 600 | Feb | 1,228 | 1,183 | 1,049 | 1,225 | Feb | 818 | 624 | 600 | |
| Mar | 413 | 400 | 310 | 382 | Mar | 745 | 696 | 680 | 750 | Mar | 1,338 | 1,250 | 1,096 | 1,189 | Mar | 852 | 662 | 593 | |
| Apr | 503 | 487 | 378 | 465 | Apr | 761 | 744 | 688 | 750 | Apr | 1,408 | 1,229 | 1,250 | 1,246 | Apr | 818 | 674 | 587 | |
| May | 592 | 573 | 444 | 479 | May | 763 | 796 | 723 | 879 | May | 1,378 | 1,383 | 1,264 | 1,342 | May | 823 | 677 | 613.5 | |
| June | 795 | 770 | 597 | 554 | June | 753 | 786 | 720 | 869 | June | 1,372 | 1,425 | 1,208 | 1,280 | June | 828 | 680 | 640 | |
| July | 1,076 | 860 | 667 | 496 | July | 792 | 804 | 709 | 773 | July | 1,292 | 1,400 | 1,240 | 1,265 | July | 841 | 680 | 640 | |
| Aug | 950 | 833 | 646 | 512 | Aug | 883 | 807 | 720 | 894 | Aug | 1,066 | 1,152 | 943 | 1,115 | Aug | 812 | 698 | 692 | |
| Sep | 816 | 690 | 535 | 618 | Sep | 993 | 987 | 913 | 1,000 | Sep | 957 | 903 | 696 | 933 | Sep | 761 | 588 | 633 | |
| Oct | 792 | 630 | 488 | 677 | Oct | 1,200 | 1,050 | 827 | 1,050 | Oct | 900 | 845 | 535 | 766 | Oct | 711 | 528 | 532 | |
| Nov | 875 | 612 | 474 | 697 | Nov | 1,147 | 989 | 816 | 980 | Nov | 875 | 684 | 504 | 660 | Nov | 705 | 528 | 495 | |
| Dec | 841 | 640 | 496 | 667 | Dec | 1,159 | 970 | 720 | 850 | Dec | 879 | 789 | 513 | 728 | Dec | 703 | 540 | 450 | |
| AVG | 710 | 629 | 487 | 545 | AVG | 905 | 837 | 726 | 829 | AVG | 1,163 | 1,108 | 930 | 1,081 | AVG | 790 | 623 | 586 | |
| Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | |
| 1996 | | | | | 1997 | | | | | 1998 | | | | | 1999 | | | | |
| Jan | 697 | 535 | 475 | 465 | Jan | 1,318 | 1,087 | 1,040 | 1,040 | Jan | 1,324 | 900 | 1,000 | 920 | Jan | 851 | 683 | 600 | |
| Feb | 692 | 563 | 469 | 502 | Feb | 1,378 | 1,125 | 1,080 | 1,146 | Feb | 1,265 | 962 | 1,038 | 1,146 | Feb | 1,151 | 796 | 700 | |
| Mar | 684 | 605 | 496 | 515 | Mar | 1,470 | 1,327 | 1,240 | 1,349 | Mar | 1,276 | 1,000 | 1,114 | 1,150 | Mar | 1,145 | 876 | 770 | |
| Apr | 721 | 674 | 524 | 555 | Apr | 1,515 | 1,488 | 1,405 | 1,475 | Apr | 1,106 | 1,100 | 1,037 | 1,063 | Apr | 1,227 | 933 | 820 | |
| May | 894 | 775 | 580 | 644 | May | 1,514 | 1,592 | 1,515 | 1,653 | May | 1,087 | 1,100 | 937.5 | 1,000 | May | 1,395 | 1,287 | 1,090 | |
| June | 964 | 812 | 610 | 680 | June | 1,523 | 1,667 | 1,840 | 1,783 | June | 916 | 800 | 900 | 960 | June | 1,584 | 1,500 | 1,165 | |
| July | 999 | 951 | 817 | 795 | July | 1,511 | 1,600 | 1,623 | 1,729 | July | 996 | 1,000 | 1,000 | 960 | July | 1,626 | 1,500 | 1,242 | |
| Aug | 996 | 1,000 | 919 | 853 | Aug | 1,464 | 1,530 | 1,713 | 1,664 | August | 980 | 1,925 | 891 | 950 | Aug | 1,544 | 1,438 | 1,240 | |
| Sep | 1,006 | 1,037 | 937 | 917 | Sep | 1,396 | 1,500 | 1,174 | 1,500 | Sep | 955 | 925 | 872 | 930 | Sep | 1,424 | 1,325 | 962 | |
| Oct | 1,040 | 855 | 807 | 860 | Oct | 1,341 | 1,279 | 911 | 1,167 | Oct | 964 | 940 | 863 | 920 | Oct | 1,412 | 1,351 | 1,092 | |
| Nov | 1,100 | 950 | 920 | 980 | Nov | 1,231 | 1,143 | 990 | 950 | Nov | 931 | 797 | 729 | 778 | Nov | 1,440 | 1,367 | 1,104 | |
| Dec | 1,200 | 1,000 | 980 | 1,020 | Dec | 1,272 | 1,167 | 990 | 943 | Dec | 883 | 800 | 563 | 600 | Dec | 1,446 | 1,300 | 1,092 | |
| AVG | 916 | 813 | 711 | 732 | AVG | 1,411 | 1,375 | 1,293 | 1,367 | AVG | 1,057 | 1,021 | 912 | 948 | AVG | 1,354 | 1,196 | 990 | |

| Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus |
|------------|-----------------|----------------|----------------|-----------------|------------|-----------------|----------------|----------------|-----------------|------------|-----------------|----------------|----------------|-----------------|------------|-----------------|----------------|
| 2000 | | | | | 2001 | | | | | 2002 | | | | | 2003 | | |
| Jan | 1,424 | 1,300 | 1,108 | 1,200 | Jan | 1,413 | 1,305 | 923 | 1,000 | Jan | 842 | 613 | 450 | 480 | Jan | 1,200 | 1,200 |
| Feb | 1,467 | 1,227 | 1,028 | 1,114 | Feb | 1,335 | 1,304 | 985 | 1,067 | Feb | 830 | 653 | 500 | 480 | Feb | 1,063 | 1,200 |
| Mar | 1,392 | 1,172 | 1,183 | 1,282 | Mar | 1,298 | 1,219 | 938 | 1,016 | Mar | 677 | 700 | 458 | 480 | Mar | 1,040 | 1,200 |
| Apr | 1,404 | 1,112 | 1,173 | 1,271 | Apr | 1,244 | 1,029 | 816 | 884 | Apr | 749 | 700 | 483 | 500 | Apr | 1,125 | 1,200 |
| May | 1,496 | 1,430 | 1,165 | 1,262 | May | 1,191 | 1,054 | 845 | 915 | May | 866 | 705 | 583 | 687 | May | 1,465 | 1,400 |
| June | 1,685 | 1,580 | 1,337 | 1,448 | June | 1,182 | 1,079 | 744 | 806 | June | 1,056 | 753 | 683 | 696 | June | 1,492 | 1,514 |
| July | 1,681 | 1,612 | 1,374 | 1,488 | July | 1,063 | 978 | 732 | 793 | July | 1,193 | 800 | 700 | 700 | July | 1,506 | 1,579 |
| Aug | 1,655 | 1,650 | 1,366 | 1,480 | Aug | 1,000 | 936 | 738 | 800 | Aug | 967 | 825 | 683 | 700 | Aug | 1,588 | 1,520 |
| Sep | 1,544 | 1,527 | 1,351 | 1,464 | Sep | 975 | 875 | 729 | 790 | Sep | 960 | 850 | 614 | 800 | Sep | 1,513 | 1,323 |
| Oct | 1,488 | 1,411 | 1,224 | 1,326 | Oct | 917 | 723 | 522 | 566 | Oct | 943 | 850 | 675 | 813 | Oct | 1,650 | 1,230 |
| Nov | 1,520 | 1,293 | 1,036 | 1,122 | Nov | 804 | 546 | 480 | 520 | Nov | 1,000 | 850 | 750 | 840 | Nov | 1,362 | 1,055 |
| Dec | 1,490 | 1,344 | 978 | 1,060 | Dec | 799 | 565 | 462 | 500 | Dec | 1,100 | 980 | 880 | 950 | Dec | 1,323 | 1,000 |
| AVG | 1,521 | 1,388 | 1,194 | 1,293 | AVG | 1,102 | 968 | 743 | 805 | AVG | 932 | 773 | 622 | 677 | AVG | 1,361 | 1,285 |

| Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus | Period | Nairobi deficit | Nakuru Surplus |
|------------|-----------------|----------------|----------------|-----------------|------------|-----------------|----------------|----------------|-----------------|------------|-----------------|----------------|----------------|-----------------|------------|-----------------|----------------|
| 2004 | | | | | 2005 | | | | | 2006 | | | | | 2007 | | |
| Jan | 1,503 | 1175 | | 1,139 | Jan | 1,480 | 1,530 | | 1,400 | Jan | 1,399 | 1,000 | | 1,304 | Jan | 1,338 | 1,253 |
| Feb | 1,427 | 1233 | | 1,302 | Feb | 1,600 | 1,493 | | 1,220 | Feb | 1,488 | 1,250 | | 1,304 | Feb | 1,323 | 1,163 |
| Mar | 2,784 | 1386 | | 1,447 | Mar | 1,500 | 1,380 | | 1,200 | Mar | 1,500 | 1,311 | | 1,162 | Mar | 1,194 | 1,057 |
| Apr | 1,493 | 1500 | | 1,490 | Apr | 1,500 | 1,310 | | 1,100 | Apr | 1,540 | 1,391 | | 1,277 | Apr | 1,178 | 1,100 |
| May | 1,492 | 1450 | | 1,500 | May | 1,500 | 1,400 | | 1,190 | May | 1,625 | 1,440 | | 1,445 | May | 1,243 | 1,100 |
| June | 1,535 | 1400 | | 1,300 | Jun | 1,510 | 1,370 | | 1,250 | Jun | 1,551 | 1,559 | | 1,498 | June | 1,204 | 1,153 |
| July | 1,580 | 1500 | | 1,500 | Jul | 1,480 | 1,470 | | 1,340 | Jul | 1,691 | 1,600 | | 1,550 | July | 1,216 | 1,200 |
| Aug | 1,578 | 1500 | | 1,500 | Aug | 1,500 | 1,310 | | 1,200 | Aug | 1,586 | 1,594 | | 1,530 | Aug | 1,198 | 1,200 |
| Sep | 1,556 | 1500 | | 1,450 | Sep | 1,200 | 900 | | 900 | Sep | 1,278 | 1,239 | | 1,124 | Sep | 1,239 | 1,200 |
| Oct | 1,568 | 1500 | | 1,363 | Oct | 1,500 | 1,450 | | 1,300 | Oct | 1,293 | 1,197 | | 1,053 | Oct | 1,229 | 1,200 |
| Nov | 1,543 | 1500 | | 1,350 | Nov | 1,550 | 1,500 | | 1,240 | Nov | 1,274 | 1,144 | | 1,000 | Nov | 1,235 | 1,057 |
| Dec | 1,600 | 1,550 | | 1,400 | Dec | 1,600 | 1,500 | | 1,200 | Dec | 1,245 | 1,178 | | 1,000 | Dec | 1,069 | 950 |
| AVG | 1,638 | 1,433 | | 1,395 | AVG | 1,495 | 1,384 | | 1,212 | AVG | 1,456 | 1,325 | | 1,271 | AVG | 1,222 | 1,136 |

| Period | Nairobi deficit | Nakuru Surplus | Kitale surplus | Eldoret surplus |
|--------|-----------------|----------------|----------------|-----------------|
| 2008 | | | | |
| Jan | 1,300 | 1,163 | | 1,200 |
| Feb | 1,340 | 1,200 | | 1,200 |
| Mar | 1,400 | 1,388 | | 1,250 |
| Apr | 1,560 | 1,500 | | 1,480 |

Appendix 2: Exchange Rate in Ksh/US Dollar

| Year | January | February | March | April | May | June | July | Aug | Sept | Oct | Nov | Dec |
|------|---------|----------|-------|-------|------|------|------|------|------|------|------|------|
| 1990 | 21.7 | 22.1 | 23.0 | 23.1 | 23.0 | 23.1 | 23.1 | 23.2 | 23.3 | 23.2 | 23.4 | 24.1 |
| 1991 | 24.7 | 25.2 | 26.6 | 27.8 | 27.8 | 28.7 | 28.6 | 29.1 | 28.7 | 28.8 | 28.4 | 28.1 |
| 1992 | 28.8 | 29.3 | 30.0 | 31.5 | 31.8 | 32.3 | 32.6 | 32.9 | 33.5 | 35.3 | 35.8 | 36.2 |
| 1993 | 35.9 | 36.5 | 45.5 | 59.9 | 63.2 | 65.1 | 65.3 | 65.6 | 67.0 | 69.0 | 68.8 | 68.2 |
| 1994 | 67.9 | 67.4 | 66.1 | 62.8 | 58.1 | 56.2 | 56.0 | 55.5 | 51.7 | 42.4 | 43.2 | 45.2 |
| 1995 | 44.5 | 44.5 | 44.1 | 44.0 | 51.9 | 53.6 | 56.6 | 55.7 | 55.4 | 55.5 | 55.5 | 55.8 |
| 1996 | 56.7 | 58.3 | 58.4 | 58.4 | 58.2 | 58.0 | 57.3 | 57.0 | 56.4 | 55.9 | 55.6 | 55.2 |
| 1997 | 54.7 | 54.9 | 54.9 | 54.4 | 53.8 | 54.2 | 57.4 | 67.1 | 63.8 | 62.6 | 63.9 | 63.1 |
| 1998 | 61.2 | 60.5 | 60.1 | 59.6 | 62.6 | 60.5 | 59.3 | 59.4 | 60.0 | 59.9 | 59.6 | 61.8 |
| 1999 | 61.3 | 61.8 | 63.6 | 65.3 | 68.5 | 74.5 | 72.3 | 74.4 | 75.4 | 75.2 | 74.7 | 74.6 |
| 2000 | 71.8 | 73.3 | 74.1 | 74.7 | 76.6 | 77.1 | 75.3 | 77.4 | 78.4 | 79.3 | 77.9 | 79.1 |
| 2001 | 78.5 | 77.8 | 77.6 | 77.4 | 78.5 | 78.1 | 78.7 | 78.7 | 78.9 | 78.5 | 78.8 | 78.3 |
| 2002 | 78.4 | 77.9 | 78.0 | 78.2 | 78.3 | 78.6 | 78.7 | 78.5 | 78.7 | 79.3 | 79.3 | 79.7 |
| 2003 | 77.2 | 76.7 | 76.3 | 75.7 | 71.5 | 73.6 | 74.3 | 76.0 | 76.0 | 78.1 | 78.6 | 75.7 |
| 2004 | 76.0 | 76.5 | 76.8 | 78.3 | 79.0 | 79.3 | 79.9 | 81.3 | 81.0 | 81.3 | 80.9 | 79.8 |
| 2005 | 76.8 | 75.6 | 75.0 | 76.6 | 77.1 | 76.2 | 76.0 | 75.7 | 74.1 | 73.6 | 74.5 | 72.4 |
| 2006 | 72.0 | 73.2 | 71.9 | 71.2 | 72.3 | 73.9 | 73.7 | 72.6 | 72.7 | 72.0 | 70.0 | 69.4 |
| 2007 | 70.5 | 69.7 | 68.8 | 68.3 | 67.0 | 66.6 | 67.7 | 67.0 | 67.0 | 67.1 | 64.4 | 64.0 |

Appendix 3: National wheat flour and wheat products average Prices

| Commodity | WHEAT FLOUR- WHITE | SELF RAISING | BREAD- WHITE | BISCUITS | SPAGHETTI | Commodity | WHEAT FLOUR-WHITE | SELF RAISING | BREAD-WHITE | BISCUITS | SPAGHETTI |
|-----------|-----------------------|-----------------|-----------------|----------|-----------|-----------|-------------------|--------------|-------------|----------|-----------|
| Weight | 1.382 | 0.419 | 3.604 | 0.139 | 0.128 | Weight | 1.382 | 0.419 | 3.604 | 0.139 | 0.128 |
| Unit | 2 Kg | 1 Kg | 400 G | 200 G | 500 G | Unit | 2 Kg | 1 Kg | 400 G | 200 G | 500 G |
| Jan-02 | 64.2 | 40.6 | 22.4 | 40.1 | 50.6 | Feb-05 | 81 | 46.7 | 23.9 | 41.6 | 49.6 |
| Feb-02 | 62.6 | 40.3 | 22 | 39.8 | 44.5 | Mar-05 | 80 | 46.3 | 23.9 | 41.8 | 49.7 |
| Mar-02 | 62.6 | 40.3 | 22 | 39.8 | 44.5 | Apr-05 | 79.9 | 46.4 | 23.9 | 41.9 | 49.3 |
| Apr-02 | 62.3 | 40.2 | 21.8 | 39.9 | 44.9 | May-05 | 79.3 | 45.9 | 23.8 | 41.8 | 49.4 |
| May-02 | 62.3 | 40.2 | 21.7 | 39.8 | 44.8 | Jun-05 | 77.8 | 45.4 | 23.8 | 41.7 | 49.3 |
| Jun-02 | 62.8 | 40.3 | 21.8 | 39.9 | 45.5 | Jul-05 | 76.5 | 45.2 | 23.9 | 42 | 49 |
| Jul-02 | 62.7 | 40.3 | 21.5 | 39.8 | 45.5 | Aug-05 | 75.2 | 44.8 | 23.8 | 42.5 | 48.6 |
| Aug-02 | 62.4 | 40.2 | 21.1 | 40 | 45.3 | Sep-05 | 74.4 | 44.8 | 23.8 | 42.7 | 49.4 |
| Sep-02 | 62.4 | 40 | 20.9 | 40.1 | 44.9 | Oct-05 | 73.5 | 44.8 | 23.9 | 43 | 49.2 |
| Oct-02 | 62.7 | 39.7 | 20.8 | 40.1 | 45 | Nov-05 | 72.8 | 44.6 | 24 | 43 | 49.3 |
| Nov-02 | 62.6 | 40 | 20.7 | 39.9 | 44.3 | Dec-05 | 73.7 | 44.7 | 23.9 | 43.4 | 48.6 |
| Dec-02 | 62.5 | 40.2 | 20.6 | 39.8 | 44.2 | Jan-06 | 74.3 | 45 | 24 | 43.1 | 48.3 |
| Jan-03 | 62.8 | 40.5 | 20.5 | 39.7 | 44 | Feb-06 | 73.5 | 44.5 | 23.9 | 42.7 | 48.2 |
| Feb-03 | 63 | 41.1 | 20.5 | 39.6 | 44.7 | Mar-06 | 72.3 | 44.3 | 24 | 43.1 | 48 |
| Mar-03 | 63.4 | 40.9 | 20.6 | 39.5 | 45 | Apr-06 | 72.1 | 44.2 | 24 | 43 | 47.4 |
| Apr-03 | 63.1 | 40.9 | 20.5 | 39.5 | 44.9 | May-06 | 72 | 44 | 23.9 | 42.9 | 47.4 |
| May-03 | 64.1 | 41.4 | 20.7 | 39.5 | 45.3 | Jun-06 | 72.1 | 42.7 | 24 | 42.8 | 47 |
| Jun-03 | 64.3 | 41.5 | 20.7 | 39.7 | 45.5 | Jul-06 | 71.5 | 41.8 | 24 | 42.7 | 47.5 |
| Jul-03 | 63.8 | 41.1 | 21.1 | 41 | 43.7 | Aug-06 | 71.4 | 42 | 24 | 43 | 47.5 |
| Aug-03 | 63.2 | 41.1 | 21.2 | 40.5 | 44.1 | Sep-06 | 71.3 | 41.5 | 24 | 42.4 | 47.4 |
| Sep-03 | 63.7 | 41.1 | 21.3 | 40.6 | 44.6 | Oct-06 | 72.4 | 41.9 | 24 | 42.4 | 47.5 |
| Oct-03 | 64.6 | 41.5 | 20.8 | 39.3 | 45.4 | Nov-06 | 82 | 44.8 | 24.5 | 42.2 | 47.9 |
| Nov-03 | 66.5 | 41.9 | 20.8 | 39.2 | 45.5 | Dec-06 | 85.2 | 46 | 25.4 | 42.1 | 48.4 |
| Dec-03 | 70.9 | 43 | 21.1 | 39.4 | 45.9 | Jan-07 | 84 | 46.4 | 25.5 | 42.3 | 48.5 |
| Jan-04 | 77.4 | 44 | 21.7 | 39.5 | 45.9 | Feb-07 | 82.1 | 46 | 25.6 | 43 | 48.6 |
| Feb-04 | 78.2 | 44.1 | 21.7 | 39.6 | 45.7 | Mar-07 | 80.7 | 45.7 | 25.5 | 43.1 | 48.2 |
| Mar-04 | 78.8 | 44.7 | 22.4 | 39.5 | 46.5 | Apr-07 | 80.4 | 45.4 | 25.6 | 43.1 | 48.4 |
| Apr-04 | 81.1 | 45.6 | 23.7 | 46.1 | 48.5 | May-07 | 83 | 46.1 | 25.9 | 43.2 | 48.1 |
| May-04 | 82.9 | 46.4 | 22.7 | 46.2 | 49.8 | Jun-07 | 85.3 | 46.7 | 26.2 | 43.7 | 48 |
| Jun-04 | 83.5 | 46.5 | 24.6 | 46.1 | 49.6 | Jul-07 | 87.6 | 47.7 | 27 | 43.9 | 48.7 |
| Jul-04 | 81.9 | 46.1 | 24.1 | 41.4 | 46.1 | Aug-07 | 92.2 | 49.1 | 27.4 | 44 | 49.2 |
| Aug-04 | 81.9 | 46.1 | 24.1 | 41.4 | 46.1 | Sep-07 | 102.12 | 51.96 | 28.32 | 43.73 | 49.89 |
| Sep-04 | 81.5 | 46.2 | 24.1 | 41.2 | 46.5 | Oct-07 | 109.83 | 56 | 29.36 | 44.34 | 50.75 |
| Oct-04 | 81.5 | 46.5 | 23.9 | 40.2 | 47.6 | Nov-07 | 111.52 | 56.59 | 30.45 | 44.51 | 50.67 |
| Nov-04 | 81.6 | 46.7 | 24 | 40.5 | 48.2 | Dec-07 | 112.27 | 57.56 | 31.05 | 44.97 | 51.39 |
| Dec-04 | 81.7 | 46.7 | 23.9 | 40.5 | 48.3 | Jan-08 | 115.05 | 58.95 | 32.3 | 45.36 | 51.87 |
| Jan-05 | 81.6 | 46.9 | 24 | 41 | 48.4 | | | | | | |

| Commodity | WHEAT FLOUR- | SELF | BREAD- | BISCUITS | SPAGHETTI | Commodity | WHEAT FLOUR-WHITE | SELF RAISING | BREAD-WHITE | BISCUITS | SPAGHETTI |
|-----------|--------------|---------|--------|----------|-----------|-----------|-------------------|--------------|-------------|----------|-----------|
| | WHITE | RAISING | WHITE | | | | 1.382 | 0.419 | 3.604 | | |
| Weight | 1.382 | 0.419 | 3.604 | 0.139 | 0.128 | Weight | 1.382 | 0.419 | 3.604 | 0.139 | 0.128 |
| Unit | 2 Kg | 1 Kg | 400 G | 200 G | 500 G | Unit | 2 Kg | 1 Kg | 400 G | 200 G | 500 G |
| Oct-97 | 63.7 | 55.1 | 19.6 | 33.7 | 41.2 | Jan-00 | 64.6 | 39.9 | 21.5 | 34.8 | 46.2 |
| Nov-97 | 63.6 | 55.3 | 19.9 | 35.2 | 42.4 | Feb-00 | 64.6 | 40 | 21.5 | 34.7 | 45.9 |
| Dec-97 | 64.2 | 55.3 | 20 | 35.2 | 42.7 | Mar-00 | 64.6 | 40 | 21.5 | 34.7 | 45.9 |
| Jan-98 | 65.2 | 56 | 20 | 35.3 | 44.2 | Apr-00 | 64.4 | 40.1 | 21.7 | 35 | 44.8 |
| Feb-98 | 66 | 55.8 | 19.9 | 35.3 | 44.8 | May-00 | 64.5 | 40.4 | 21.7 | 35.3 | 44.9 |
| Mar-98 | 66.3 | 55.9 | 19.6 | 35.3 | 45 | Jun-00 | 65.7 | 40.5 | 21.7 | 35.5 | 45 |
| Apr-98 | 65.8 | 55.5 | 20 | 35.5 | 44.9 | Jul-00 | 70 | 41.7 | 22.2 | 36.3 | 46.3 |
| May-98 | 65.6 | 55.5 | 20.1 | 35.4 | 45.3 | Aug-00 | 69.8 | 42.3 | 22.2 | 36.6 | 47.2 |
| Jun-98 | 65.5 | 55.6 | 20.1 | 35.5 | 45.6 | Sep-00 | 69.4 | 42.8 | 22.2 | 36.7 | 46.8 |
| Jul-98 | 65 | 55.6 | 20.1 | 35.5 | 45.8 | Oct-00 | 68.3 | 42.8 | 22.4 | 35.9 | 45 |
| Aug-98 | 64.8 | 55.4 | 20.1 | 34.7 | 45 | Nov-00 | 66.4 | 42.7 | 22.4 | 36.6 | 45.3 |
| Sep-98 | 63.9 | 55 | 20 | 33.6 | 45 | Dec-00 | 67 | 41.3 | 22.3 | 36.2 | 45.3 |
| Oct-98 | 66.2 | 40.5 | 21.6 | 34.4 | 46.1 | Jan-01 | 67.1 | 41.5 | 22.2 | 36.9 | 47.6 |
| Nov-98 | 65.7 | 40.3 | 21.5 | 34.8 | 46 | Feb-01 | 66.7 | 41.6 | 22.2 | 37.2 | 48.3 |
| Dec-98 | 65.3 | 40.2 | 21.5 | 34.8 | 46.2 | Mar-01 | 66.7 | 43 | 22.2 | 36.8 | 48.3 |
| Jan-99 | 61.7 | 49.7 | 19.9 | 33 | 44.9 | Apr-01 | 65.5 | 42.5 | 22.2 | 37.3 | 48.7 |
| Feb-99 | 62 | 50.1 | 20.8 | 33.1 | 44.3 | May-01 | 65.2 | 42.2 | 22.2 | 37.6 | 48.4 |
| Mar-99 | 62.9 | 39.1 | 21 | 33.1 | 44.4 | Jun-01 | 65.2 | 42.2 | 22.2 | 37.6 | 48.4 |
| Apr-99 | 62.8 | 39.5 | 20.9 | 33.8 | 44.9 | Jul-01 | 65.2 | 42.2 | 22.2 | 37.6 | 48.4 |
| May-99 | 65.4 | 39.9 | 21.4 | 34.4 | 46 | Aug-01 | 65 | 41.6 | 22.2 | 37.4 | 48.4 |
| Jun-99 | 66.3 | 40.5 | 21.5 | 34.1 | 46.3 | Sep-01 | 65 | 40.9 | 22.1 | 37.6 | 48 |
| Jul-99 | 65.8 | 40.3 | 21.4 | 33.9 | 46.4 | Oct-01 | 65.2 | 42.2 | 22.2 | 37.6 | 48.4 |
| Aug-99 | 66.2 | 40.3 | 21.5 | 33.9 | 46.4 | Nov-01 | 65 | 41.6 | 22.2 | 37.4 | 48.4 |
| Sep-99 | 66.2 | 40.3 | 21.8 | 33.9 | 46.4 | Dec-01 | 65 | 40.9 | 22.1 | 37.6 | 48 |
| Oct-99 | 66.2 | 40.5 | 21.6 | 34.4 | 46.1 | | | | | | |
| Nov-99 | 65.7 | 40.3 | 21.5 | 34.8 | 46 | | | | | | |
| Dec-99 | 65.3 | 40.2 | 21.5 | 34.8 | 46.2 | | | | | | |

Appendix 4: Trends in Maize Import and export Parity

| | 1992 | 1994 | 1999 | 2000 | 2003 | 2004 | 2005 | 2006 | 2007 | |
|--|---------------|---------------|--------------|------------|------------|------------|------------|------------|------------|-----|
| Maize FoB Ex-Durban (2004 & 2008) | 104 | 125 | 130 | 135 | 140 | 144 | 148 | 152 | 160 | |
| Freight Charges Per ton (<i>Ocean Freight</i>) | 15.4 | 15 | 15 | 34 | 34 | 34 | 34 | 38 | 40 | |
| Insurance (1% FoB) | 0.15 | 0.15 | 0.15 | 0.34 | 0.34 | 0.34 | 0.34 | 0.38 | 0.40 | |
| Other Charges related to Freight | 6 | 8 | 9 | 10 | 12 | 14 | 15 | 19 | 23 | |
| <i>Freight & Insurance+ related Charges</i> | <i>22</i> | <i>23</i> | <i>24</i> | <i>45</i> | <i>47</i> | <i>48</i> | <i>49</i> | <i>58</i> | <i>63</i> | |
| KPA Handling Charges & Duties (taxes included) | 38 | 39 | 43 | 45 | 44 | 41 | 39 | 43 | 47 | |
| Cif Mombasa \$/ton | 126.6 | 188.4 | 198.5 | 226.2 | 232.5 | 235.1 | 237.8 | 254.4 | 271.5 | |
| Ex-Rate (Ksh/\$) | 31 | 63 | 75 | 73 | 76 | 81 | 78 | 70 | 66.89 | |
| Landed Mombasa - Warehouse/90 kg bag | 353 | 1,068 | 1,340 | 1,486 | 1,590 | 1,714 | 1,669 | 1,603 | 1,634 | 2 |
| Road Haulge to Nairobi & Handling (Ksh/bag) | 50 | 138 | 212 | 197 | 219 | 241 | 232 | 208 | 211 | |
| | 1992 | 1994 | 1999 | 2000 | 2003 | 2004 | 2005 | 2006 | 2007 | |
| Maize FoB Ex-Durban (2004 & 2008) | 104 | 125 | 130 | 135 | 140 | 144 | 148 | 152 | 160 | |
| Freight Charges Per ton (<i>Ocean Freight</i>) | 15.4 | 15 | 15 | 34 | 34 | 34 | 34 | 38 | 40 | |
| Insurance (1% FoB) | 1.04 | 1.25 | 1.30 | 1.35 | 1.40 | 1.44 | 1.48 | 1.52 | 1.60 | |
| Other Charges related to Freight | 6 | 8 | 9 | 10 | 12 | 14 | 15 | 19 | 23 | |
| KPA Handling Charges & Duties (taxes included) | 38 | 39 | 43 | 45 | 44 | 41 | 39 | 43 | 47 | |
| Cif Mombasa \$/ton | 164.44 | 188.25 | 198.3 | 226 | 232 | 235 | 237 | 254 | 271 | |
| Road Haulge to Nairobi & Handling (Ksh/bag) | | | | | | | | | | |
| Total cost | 22 | 24 | 25 | 46 | 48 | 49 | 51 | 59 | 64 | |
| Export parity price (USD/tonne) | 81.56 | 100.75 | 104.70 | 89.15 | 91.81 | 94.62 | 97.44 | 93.21 | 95.69 | 18 |
| <i>Ex-Rate (Ksh/\$)</i> | <i>31</i> | <i>63</i> | <i>75</i> | <i>73</i> | <i>76</i> | <i>81</i> | <i>78</i> | <i>70</i> | <i>67</i> | |
| Export parity price (Kshs/tonne) | 2,528 | 6,347 | 7,853 | 6,508 | 6,978 | 7,665 | 7,600 | 6,525 | 6,401 | 12 |
| Export parity price (Kshs/bag) | 228 | 571 | 707 | 586 | 628 | 690 | 684 | 587 | 576 | |
| Import parity price (Kshs/bag) | 353 | 1068 | 1340 | 1486 | 1590 | 1714 | 1669 | 1603 | 1634 | |
| Import parity (Kshs/tonne) | 3924.414 | 11869.2 | 14883.75 | 16509.64 | 17666.43 | 19045.11 | 18548.135 | 17809.124 | 18157.72 | 326 |
| Import parity price (USD/tonne) | 127 | 188 | 198 | 226 | 232 | 235 | 238 | 254 | 271 | |

Annex 3.

Tanzania Maize Trade Country Profile

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Acknowledgements: Funding for this research was provided by Michigan State University under World Bank Project No. No. 7144132 *Strengthening Food Security in Sub-Saharan Africa through Trade Liberalization and Regional Integration* .

1. INTRODUCTION

The agriculture sector plays an important role in the Tanzanian economy and possesses the potential to advance the country's objectives of growth and poverty reduction. It contributes significantly in terms of aggregate growth (6.7%), exports (traditional exports⁶) (21.8%), employment (about 80%) and linkages with other sectors. The sector contributes the most to GDP (over 45% of the GDP) and supports livelihoods of over 90% of Tanzanians living in the rural areas. Thus, for most of the poor (majority of whom are smallholder farmers) in Tanzania, agriculture is the main source of their livelihood. The performance of agriculture is thus a key factor in raising the income of the rural population and reducing poverty. As agriculture has strong linkages with the rest of the rural economy, a strong agricultural performance usually leads to investment and increasing economic activity in the rest of the rural economy, thus contributing to rural employment and further poverty reduction. Accounting for 46% of total value-added and about 22% of total exports the agriculture sector has a central role in determining the national income and placing Tanzania in the global economy.

2. Maize Production in Tanzania

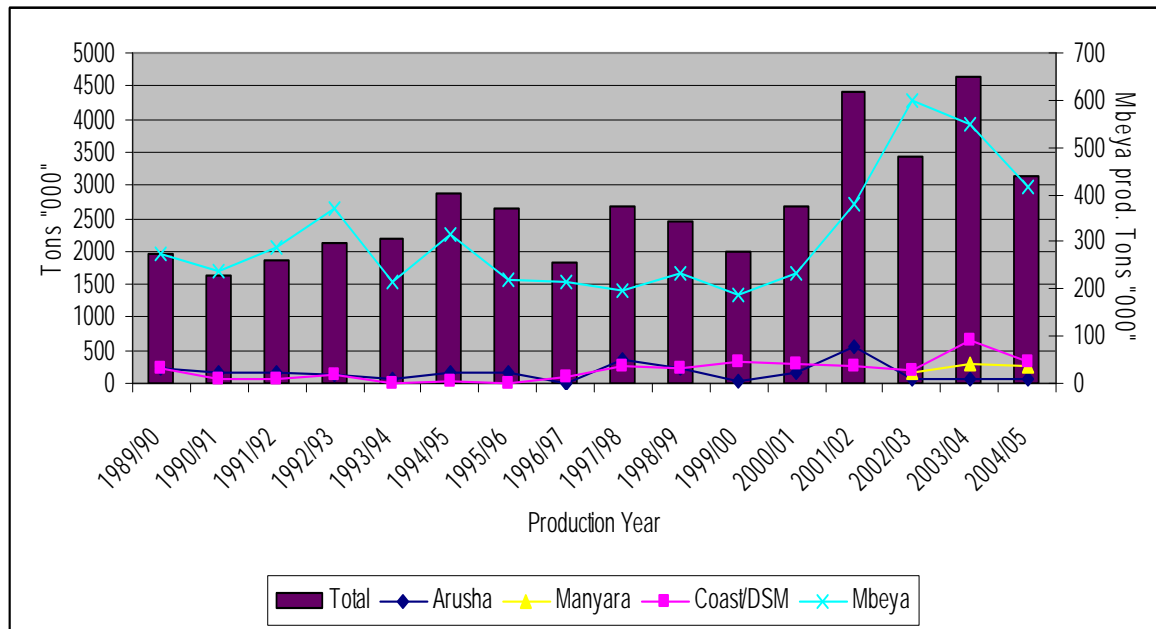
Food production dominates Tanzania's agriculture economy with over 5 million hectares cultivated per year of which 85 per cent is food crops. Maize is the main subsistence crop, and is grown by more than 50 per cent of Tanzanian farmers. In the past two decades Tanzania has ranked among the top 25 maize producing countries in the world, dropping out of the list only three times 1986, 1997 and 2003. Tanzania produces mostly white maize with an annual average of 2.5 million tonnes. Maize is produced almost throughout the country (in all 21 mainland Regions). Maize is grown on about 41 per cent of the cultivated land during the (*masika*) main season and 47 per cent of the cultivated land during the (*vuli*) second season. The *vuli* season (October-December) contributes approximately 15 per cent of the total annual maize production with Mara, Arusha, Kilimanjaro, Tanga, Morogoro, Mbeya, Coast, Kagera, Kigoma, and Mwanza regions having two agricultural seasons per year (*vuli* and *masika* seasons). The remaining maize production is from unimodal and bimodal *masika* long rain seasons. Table (1a) and Figure 1 below show production pattern for major maize producing regions in Tanzania, which account for about 50 per cent of all maize produced in the country.

Maize is largely produced in smallholder farms almost throughout the country although production and demand levels vary among regions thus creating surplus regions. Although maize is produced in all 21 regions of mainland Tanzania, only 6 regions are reported to have a regular surplus. The maize surplus regions, in descending order are Iringa, Mbeya, Rukwa, Ruvuma, Arusha and Singida. Four of the six main maize producing regions in the country are in the southern highlands of Tanzania, which account for a larger share of the maize produced in the country. This is a result of the National Maize Project (1974 – 1979) which provided subsidized agricultural inputs to

6 Traditional exports include major export cash crops (Coffee, cotton, sisal, tea, cashewnuts, tobacco, and clove)

high potential areas until 1983. Most of these inputs were distributed in the Southern Highlands and Arusha region, mostly for maize production. Mbeya and Iringa are the largest producers and account for almost a quarter of the country's maize production. Annual maize production has generally been fluctuating, the annual growth in maize production has been 2.4 per cent over 1985-1998 and 2.7 per cent since 1990. The fluctuating trend in maize production is largely due to rainfall fluctuation as most maize is rainfed.

Figure 1 Tanzania Maize Production 1990 - 2005



Source: Computations from MAFSC various data

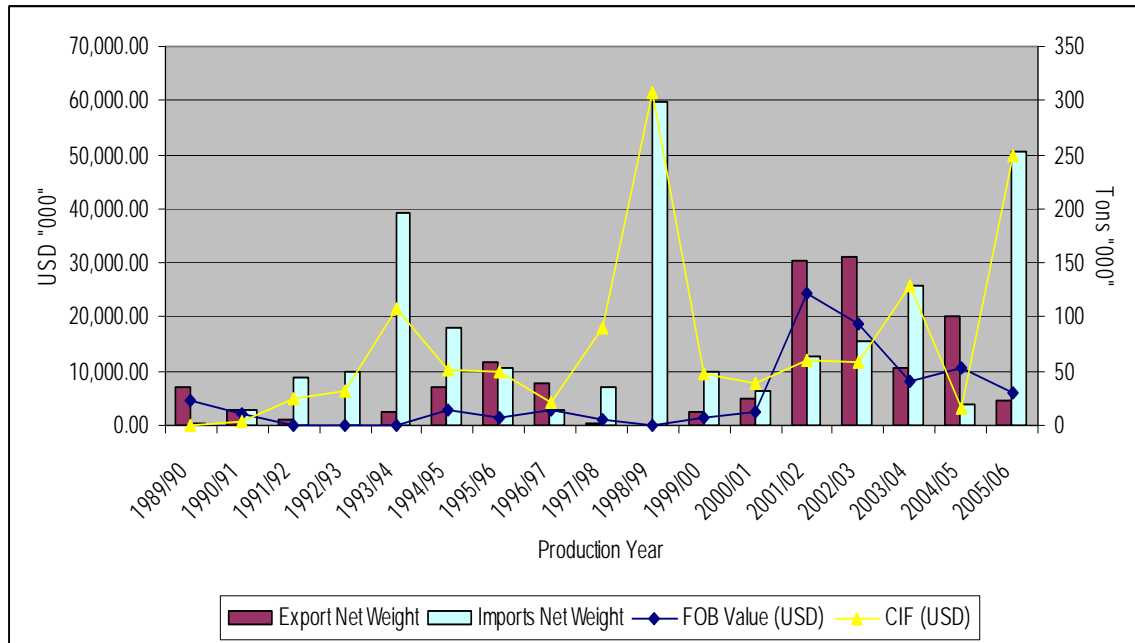
3. Maize Trade and Flows in Tanzania

Most of the maize produced by rural households is for subsistence although the marketed share seems to be increasing since liberalization of markets. For instance in the early 90s it was estimated that 25% of produced maize was sold in the market. This is an increase of 5 percentage points from the 1983/84 estimate of 20 %. Currently, it is estimated that the percentage of marketed share is 40% (MAFSC). The maize marketing system is characterized by a very large number of small traders operating both from the main centers of production and from the major urban areas.

Although most of the maize produced in the country is consumed locally, during good years, Tanzania exports maize to neighbouring countries such as Kenya, Zambia, DRC and Malawi. These exports fluctuate depending on harvests within the country and in neighbouring countries. Most of the exported maize comes from the southern highlands regions of Iringa, Mbeya, Ruvuma and Rukwa. These regions are not only major maize producing regions in Tanzania but they are also close to DRC, Zambia and Malawi. Recently Manyara region has increased its contribution to exports especially to Kenya.

Although Tanzania is almost self sufficient in Maize, it has been importing maize in the form of food aid and commercial imports to alleviate shortages caused by natural calamities such as drought and floods. Table 1 and Figure 2 show maize exports and imports from 1990 to 2006.

Figure 2 Tanzania Maize Flows (Exports and Imports) 1990 – 2006



Source: Computations from TRA data

As pointed out above, only 6 out of the 21 regions in mainland Tanzania are maize surplus regions. Therefore efficient inter-regional trade of maize is important in linking producers in surplus areas with consumers in deficit areas. Efficient trade will occur if maize markets in surplus and deficit regions are integrated. However, several factors affect the degree of market integration between regional markets in Tanzania. The most important factor is transfer costs whose major component is transportation cost. Other transfer costs are handling (loading and unloading), insurance, storage, etc. Transportation cost depends on distance, topography (e.g. plain versus mountainous road) and road quality through depreciation. These factors affect market integration indirectly through their contribution to transportation cost. Factors other than transfer cost that influence market integration are flow of market information determined by telecommunication infrastructure, degree of competition in the markets as well as government policies and institutions.

Associated with market integration is the degree of price transmission, which may have an effect on the speed of traders' response to move maize to deficit regions. Maize trade in Tanzania is characterized by a large number of small and medium traders who operate from both maize surplus and deficit markets in rural and urban areas. Most of them do not own transport. They rely on hiring trucks and rail wagons. High transportation cost between regions is a disincentive for these traders to engage in maize trade. Given the great size of Tanzania and relatively costly transport due to long distances and quality of

roads from Dar-es-Salaam, some regional markets are poorly integrated with markets in Dar-es-Salaam, which is a major focal point for maize price formation in Tanzania⁷. For example Arusha, Morogoro, Iringa and Njombe maize markets are integrated with Dar-es-Salaam. Due to long distances between them Mbeya - Dar-es-Salaam (893 Km) and Tabora - Dar-es-Salaam (1078 Km) markets are segmented. On the other hand, the high transport costs from Dar-es-Salaam affect transmission of local prices from one region to another.

4. Trade Policy Reforms and Maize Marketing

Maize market liberalization in Tanzania has involved, among others, elimination of the regulatory control over the maize prices and has reduced government involvement in distribution of maize in the domestic markets. Reforms in the food crop sectors began with government withdrawal from controlling prices of cereal grains and reducing the monopoly of the National Milling Corporation (NMC) in cereal grain marketing including maize. During the 1988/89 cropping season, private traders were allowed to compete with Cooperatives and NMC in purchase of maize directly from farmers. Government control over maize producer and consumer prices ended in 1989/90. In 1990/91, the government began to announce indicative maize prices as a guide to farmers in negotiating with traders. This ended during the 1992/93 cropping season and thereafter maize and other grain prices depended on market conditions (demand and supply situation). Subsidy on inputs particularly fertilizer subsidy was officially removed in 1994/95. Also controls on importation and distribution of inputs of most crops including inputs for maize production were removed.

Despite deregulation of the maize market there are still notable forms of government interventions today such as the re-introduction of fertilizer subsidies, the operation of the Strategic Grain Reserves (SGR) and restrictions on inter-district, inter-regional, and much more so, cross-border trade (with neighbouring countries). Government's reluctance to leave food security in the hands of private sector (and hence market forces) is based on argument of ensuring food market stability. Skepticism on the ability of a liberalised market to maintain food security is partly based on existence of speculative behaviour of some traders in times of food shortages.

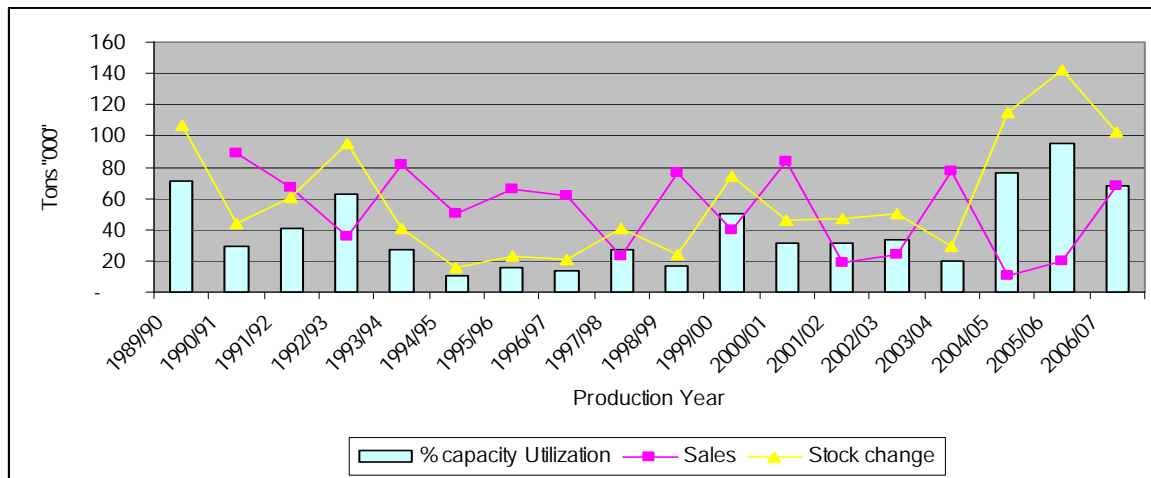
4.1. Grain Reserve and Price stabilization

The Ministry of Agriculture Food Security and Cooperatives (MAFSC) maintains 15 silos under the Food Security Department that are spread over the regions. The silos operating under Strategic Grain Reserve were established in 1977 and enforced by Food security Act No 10 of 1991. They were formed with the objective of maintaining reserve

⁷ Dar-es-salaam is considered a major focal point for maize price formation for several reasons. It is the largest urban centre in the country with a population of about 5 million people (URT, 2002 Population Census). The city relies entirely on maize from other regions or through imports especially during nationwide maize deficit. Thirdly, Dar-es-Salaam is the largest import and export cite for agricultural products. Fourthly, the city has the highest per capita income, which denotes an effective demand. Lastly, major livestock feed industries and some breweries located in Dar-es-Salaam add to the total demand for maize.

maize stocks of up to 150,000 tons, which was considered adequate to meet needs for three months (to allow imports to take place) in the event of an emergency. In an increasingly liberalised market, the reserves are also seen as an important control instrument to cap prices as may be required. The capacity of SGR to meet emergency needs was eroded in the 1990s, as stocks was progressively depleted and maintained below target. The SGR is currently utilising about 68% of its storage space (Figure 3). Since they lack the capacity to compete in the local maize market, they only managed to procure 68,000 tons during the 2006/07 season. Due to budgetary constraints, it has not been possible to effect price stabilisation through a buffer stock.

Figure 3 Grain Reserve and the Stabilization Mechanism



Source: Strategic Grain Reserve

Besides SGR operations, periodic food trade restriction is another common intervention in food markets by the government. Quite often the governments have switched this policy on and off and the main argument in favour of this policy is to ensure local/domestic food security. However, these interventions not only show weakness in the current domestic marketing system, but also may hinder future market orientation of small farmers. Furthermore, these trade restrictions are seen as interfering with “producer sovereignty” because they force the farmers to sell their produces to local operators at uncompetitive prices.

Although this kind of intervention has been exercised whenever there are threats of crop failures, the complaints raised are clear indications that private and social benefits do not coincide. Banning inter-regional, inter-district, and cross-border maize trade by the government until later in the marketing year reduces the profitable market opportunities. This in turn may have disincentives to small farmers and discourage their formal and legal market orientation. Moreover, since these bans are often imposed without warning, long term planning by farmers becomes difficult, which discourage investment in the maize sector.

4.2. Maize Marketing Regulatory Framework

After the liberation of the grains market, maize marketing, which was a preserve of the government, is now open to private sector traders. There are however a number of government laws, directives and procedures that must be adhered to while importing and marketing grains. Some of the legal frameworks governing export and import of grains in Tanzania include: - Business Licensing Act No.25 of 1975 which requires that any person dealing with any business to have a business license; Tanzania Food, Drugs and Cosmetics Act No.1 of 2003, that establishes Tanzania Food and Drugs Authority (TFDA) and restrict any dealing with the food or any product referred in the Act without permit or license of the Authority; Standard Act no 3 of 1975, which regulate standards of any product whether imported or locally produced or manufactured; The Plant Protection Act No. 13 of 1997 under the Ministry of Agriculture, Food Security and Cooperatives that enforce this Act and its purposes among other things are to prevent the introduction and spread of harmful organisms; to control the importation and use of plant protection substances; and to regulate export and import of plant products. It is mandatory under the Act that any person who intends to import any plant substance or material including the grains to obtain a prescribed importation permit and that, unless exempted by the Minister through his powers provided under Section 8(6), no plant products may be imported into Tanzania without an International Phytosanitary Certificate stating that the good imported is free from any harmful organisms or it is in compliance with the Tanzanian quarantine (Section 8(3) and (4)); and The East African Community Customs Management Act, 2004, with effect the 1st January 2005. Figure 4 summarizes laws and Acts governing importation in Tanzania and responsible ministries.

Figure 4 List of Acts governing grain importation and marketing activities in Tanzania

| No. | Act | Ministry responsible |
|-----|---|-------------------------------|
| 1 | Business Licensing Act, No. 25 of 1975 | Trade, Industry and Marketing |
| 2 | Public Procurement Act of 2004 | Planning and Finance |
| 3 | Disaster Relief Coordination Act No. 9 of 1990 | Prime Minister's Office |
| 4 | Tanzania Food, Drug and Cosmetic Act No. 1 of 2003 | Health |
| 5 | Plant Protection Act No. 13 of 1997 | MAFSC |
| 6 | The East African Community Customs Management Act. 2004 | EAC |
| 7 | Customs Tariff Act. Of 1976 | Planning and Finance |
| 8 | Business Registration and Licensing Agent Act | Trade, Industry and Marketing |
| 9 | Standard Act no 3 of 1975 | Trade, Industry and Marketing |
| 10 | Tanzania Revenue Authority (TRA), Act | Planning and Finance |

5. Policies Affecting Cross-Border Maize Trade

Through discussions with grain importers and big traders it was revealed that the procedures to meet the requirements for importing or marketing grains in Tanzania are cumbersome and lengthy as laws, directives and procedures fall under different ministries. The procedures for accessing export and import permits are as follows: -

5.1. Export permit

An exporter requires an export permit from either the Food Security Department in Dar es Salaam (for the northern regions) or from the Regional Agriculture Department (for the southern regions). The export permit is in form of letter, which is copied to the customs department. The letter shows the quantity the exporter is allowed to export and the duration upon which it shall expire. If the exporter wishes to extend the period, s/he has to apply for an extension. Validity of the exports permits is one month. The permit can be processed within a day.

5.2. Import Permit

During 2005/06, the government lifted the ban on maize imports. A moratorium that was in effect through December 2006 was extended in 2007 without a time limit. A trader is, however, always required to obtain an import permit from the Food Security Department in Dar es Salaam.

5.3. Certificate of origin

For export to the EAC, a Certificate of Origin has to be secured from the Chamber of Commerce upon presentation of the Phyto-sanitary Certificate and a copy of a Sales Contract/Agreement specifying the maize is being sold for delivery outside Tanzania. The fee for the Certificate of Origin fee is TSh 20,000 per consignment for exports within EAC and COMESA. For countries within AGOA the fee is TSh 100,000. It can be issued on a walk-in walk-out basis, and generally the issuance is not a problem.

5.4. Tariff

The import duty on maize grain is 5% if imported from within East Africa countries, but attracts 25% from countries outside the EAC. There are no other duties. The government, however reserves the right to introduce periodic duties during times of crises. However the numbers of non-tariff charges are enormous, thus acting as barrier to trade. They include: - **Pre-inspection charges i.e.** each consignment to Tanzania is subjected to pre-inspection (quality and quantity) for goods valued at more than US\$ 5,000 by COTECNA at the port of entry. The pre- inspection by COTECNA attracts a fee of 1.2% of FOB value of the commodity. This must be paid at the time of applying for the Import Declaration Form (IDF) through the importing client's bank; **Phyto-sanitary charges**, the Phyto-sanitary Certificate fees take into account the type of inspection and the remedy measures that have to be undertaken. Charges may increase if fumigation is

deemed necessary or if goods are placed under quarantine. The certificate cost US\$ 15 per export consignment; **Port wharf age fees**, services provided to ships while docked or leaving port attracts a fee of 1.5% CIF value which is paid to the T.P.A (now a new authority managing the port) including tally fees at US\$ 1.00 per ton payable to the shipping agencies and; **Tanzania Central Freight Bureau (TCFB) charges**, TCFB is responsible for ensuring that freight charges for commodities exported or imported to Tanzania are reasonable and competitive. TCFB normally charges 2.5% as booking fees for ships to/from Tanzania. Other Costs may include clearing agents, and loading and unloading.

6. Conclusion

The above analyses show that maize marketing in Tanzania has become more dynamic over time with changing supply and demand patterns. The country's geographical positioning as well as the structure of maize supply and demand, contribute a lot to these dynamics. Emergence of modern retail outlets and processing capacities as well as trade in maize and maize products have also added up new dimensions in the markets. However, dependency on rain-fed agriculture, high transportation costs and unstable policy environment remain to be major hindrances to further growth of the maize subsector in the country.

Table 1: Annual Maize Balances, 1990 to 2006 ('000)

| | Production ⁺⁺ | | Domestic Exports | | Import ⁺ | | SGR Annual stock, purchases, sale and change ⁺⁺ | | |
|------|-----------------------------|-------------------|------------------|-------------------|---------------------|-------------------|--|-------|--------------|
| | Area Under Cultivation (Ha) | Production (Tons) | FOB Value (USD) | Net Weight (Tons) | CIF (USD) | Net Weight (Tons) | Purchases | Sales | Stock change |
| 1990 | 1226.1 | 1,955.8 | 4,433.0 | 35.55 | 76.2 | 2.06 | 26.3 | 88.9 | 44.4 |
| 1991 | 1400.6 | 1,633.8 | 1,981.3 | 13.80 | 600.3 | 13.72 | 83.8 | 67.4 | 60.8 |
| 1992 | 1485.4 | 1,871.6 | 110.7 | 4.52 | 5,029.9 | 44.11 | 69.5 | 35.6 | 94.7 |
| 1993 | 1416.8 | 2,130.4 | n.a | n.a | 6,499.4 | 49.88 | 27.8 | 81.3 | 41.2 |
| 1994 | 1611.8 | 2,188.1 | 13.39 | 12.89 | 21,444.4 | 196.36 | 24.3 | 49.9 | 15.7 |
| 1995 | 1763.9 | 2,874.6 | 2,795.5 | 35.73 | 10,379.0 | 90.45 | 73.2 | 65.8 | 23.0 |
| 1996 | 1637.4 | 2,648.2 | 1,460.7 | 58.14 | 9,881.0 | 52.91 | 59.2 | 61.7 | 20.5 |
| 1997 | 1564 | 1,831.2 | 2,670.0 | 38.86 | 4,381.0 | 13.49 | 43.9 | 23.5 | 40.8 |
| 1998 | 2087.9 | 2,684.7 | 1,199.4 | 1.58 | 18,197.3 | 35.58 | 60.3 | 76.7 | 24.4 |
| 1999 | 1764.3 | 2,451.7 | 1.7 | 0.02 | 61,476.1 | 298.92 | 90.3 | 40.0 | 74.7 |
| 2000 | 1,870.5 | 2,009.6 | 1,338.2 | 11.91 | 9,370.9 | 49.45 | 55.3 | 83.7 | 46.3 |
| 2001 | 1,572 | 2,693.4 | 2,577.8 | 25.58 | 7,695.5 | 31.04 | 19.7 | 19.0 | 47.0 |
| 2002 | 2956.6 | 4,408.5 | 24,489.8 | 152.31 | 11,952.6 | 63.37 | 27.4 | 23.8 | 50.7 |
| 2003 | 2852.3 | 3,444.3 | 18,716.6 | 156.16 | 11,624.6 | 77.99 | 55.9 | 77.3 | 29.3 |
| 2004 | 3173.1 | 4,651.4 | 8,149.0 | 53.75 | 25,891.9 | 128.37 | 96.2 | 10.5 | 114.9 |
| 2005 | 3109.69 | 3,131.7 | 10,760.6 | 101.39 | 3,324.7 | 18.90 | 47.6 | 20.0 | 142.6 |
| 2006 | n.a | n.a | 6,054.1 | 23.51 | 50,002.7 | 252.63 | 27.5 | 68.0 | 102.1 |

Source: Computation from SGR, MAFSC, FAOSTAT and TRA (computerization of data in TRA started in 1998)

⁺ Imports include importation for direct home use, sole use by the government of Tanzania, and for bonded warehousing

⁺⁺ Production data and SGR stocks reflect production year (1989/90....2005/2006).

Table 1a: Annual Maize Production by Region, 1990 to 2006 ('000)

| Maize Production in '000' Tones by Region | | | | | | | | | | | | | | | | |
|---|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Region\Year | 1989/90 | 1990/91 | 1991/92 | 1992/93 | 1993/94 | 1994/95 | 1995/96 | 1996/97 | 1997/98 | 1998/99 | 1999/00 | 2000/01 | 2001/02 | 2002/03 | 2003/04 | 2004/05 |
| Arusha | 228.6 | 153.2 | 160.9 | 144.0 | 63.6 | 172.2 | 169.9 | 14.3 | 362.9 | 213.8 | 42.0 | 177.5 | 562.9 | 60.4 | 73.0 | 53.1 |
| Coast/DSM | | 9.2 | 7.2 | 17.1 | 1.9 | 6.4 | 1.9 | 14.9 | 37.6 | 30.8 | 44.2 | 40.6 | | | | |
| Coast | 29.5 | * | * | * | * | * | * | * | * | * | * | * | 30.5 | 26.6 | 89.7 | 44.4 |
| Dar es Salaam | 3.3 | * | * | * | * | * | * | | * | * | * | * | 4.5 | 2.1 | 1.6 | 0.9 |
| Dodoma | 36.0 | 54.0 | 21.2 | 32.9 | 52.9 | 139.5 | 92.3 | 33.4 | 71.3 | 28.9 | 40.8 | 94.6 | 307.8 | 61.2 | 257.4 | 53.7 |
| Iringa | 457.2 | 319.7 | 464.9 | 549.0 | 326.3 | 266.0 | 318.0 | 298.1 | 483.5 | 373.7 | 285.3 | 315.5 | 492.5 | 304.1 | 636.6 | 549.1 |
| Kagera | 93.7 | 56.4 | 40.2 | 48.4 | 43.6 | 29.9 | 95.3 | 46.3 | 81.3 | 65.3 | 72.2 | 103.6 | 124.3 | 125.9 | 113.1 | 75.9 |
| Kigoma | 53.8 | 94.3 | 49.4 | 78.3 | 40.1 | 38.5 | 76.4 | 70.7 | 53.3 | 119.9 | 97.0 | 129.4 | 154.0 | 166.1 | 192.4 | 158.8 |
| Kilimanjaro | 64.4 | 64.4 | 45.1 | 59.9 | 28.1 | 125.7 | 99.4 | 36.6 | 141.3 | 181.3 | 97.7 | 159.2 | 124.6 | 67.9 | 102.8 | 117.1 |
| Lindi | 18.2 | 26.1 | 27.1 | 23.3 | 54.0 | 26.8 | 56.7 | 56.7 | 63.3 | 66.2 | 76.1 | 72.6 | 93.7 | 13.7 | 87.7 | 29.6 |
| Manyara | | | | | | | | | | | | | | 148.4 | 285.4 | 266.9 |
| Mara | 21.4 | 20.4 | 31.9 | 35.0 | 59.9 | 105.8 | 67.3 | 39.6 | 36.1 | 68.1 | 57.6 | 95.0 | 97.7 | 59.4 | 254.5 | 87.3 |
| Mbeya | 274.8 | 238.9 | 287.7 | 369.5 | 213.0 | 315.9 | 218.1 | 214.8 | 198.2 | 235.0 | 189.2 | 234.1 | 381.4 | 597.2 | 546.8 | 415.9 |
| Morogoro | 185.5 | 61.3 | 99.4 | 135.0 | 120.4 | 163.8 | 110.0 | 28.7 | 146.0 | 96.6 | 89.2 | 162.9 | 245.3 | 400.0 | 298.4 | 180.7 |
| Mtwara | 46.1 | 45.0 | 79.9 | 33.9 | 36.0 | 48.8 | 40.1 | 39.1 | 40.7 | 39.8 | 42.2 | 30.6 | 81.0 | 10.5 | 67.0 | 38.1 |
| Mwanza | 71.6 | 158.3 | 108.7 | 135.0 | 127.2 | 182.7 | 226.9 | 92.4 | 109.6 | 129.4 | 131.5 | 152.7 | 260.7 | 240.7 | 228.0 | 158.9 |
| Rukwa | 160.1 | 119.6 | 217.2 | 227.5 | 201.8 | 136.4 | 204.6 | 197.1 | 164.1 | 203.7 | 180.7 | 224.5 | 225.4 | 330.0 | 317.3 | 174.0 |
| Ruvuma | 211.6 | 213.0 | 230.8 | 241.6 | 141.1 | 202.6 | 212.7 | 211.8 | 165.7 | 199.8 | 155.0 | 162.5 | 267.7 | 207.3 | 272.7 | 185.6 |
| Shinyanga | - | - | - | - | 374.8 | 479.3 | 332.0 | 243.6 | 269.1 | 103.8 | 169.4 | 201.0 | 346.9 | 117.2 | 297.6 | 135.4 |
| Singida | - | - | - | - | 87.1 | 121.9 | 88.7 | 40.7 | 54.6 | 32.9 | 29.1 | 61.7 | 176.0 | 134.0 | 146.2 | 41.0 |
| Tabora | - | - | - | - | 116.3 | 186.0 | 139.5 | 61.7 | 104.1 | 103.8 | 101.8 | 121.0 | 193.2 | 112.7 | 205.4 | 88.2 |
| Tanga | - | - | - | - | 100.0 | 126.4 | 98.4 | 90.7 | 102.0 | 158.9 | 108.6 | 154.5 | 238.4 | 258.9 | 177.8 | 277.1 |
| Total | 1955.8 | 1633.8 | 1871.6 | 2130.4 | 2188.1 | 2874.6 | 2648.2 | 1831.2 | 2684.7 | 2451.7 | 2009.6 | 2693.4 | 4408.5 | 3444.3 | 4651.4 | 3131.7 |

Table 1b: Government Interventions through Strategic Grain Reserve 1990 to 2006 ('000)

| SGR Annual Stock Purchase, Sale And Change (Metric Tones) | | | | |
|--|------------------------|------------------|--------------|---------------------|
| Year | Opening balance | Purchases | Sales | Stock change |
| 1989/1990 | 107,000 | - | - | 107,000 |
| 1990/1991 | 107,000 | 26,277 | 88,877 | 44,400 |
| 1991/1992 | 44,400 | 83,805 | 67,418 | 60,787 |
| 1992/1993 | 60,787 | 69,482 | 35,559 | 94,710 |
| 1993/1994 | 94,710 | 27,798 | 81,262 | 41,246 |
| 1994/1995 | 41,246 | 24,275 | 49,860 | 15,661 |
| 1995/1996 | 15,661 | 73,197 | 65,841 | 23,017 |
| 1996/1997 | 23,017 | 59,154 | 61,689 | 20,482 |
| 1997/1998 | 20,482 | 43,882 | 23,532 | 40,832 |
| 1998/1999 | 40,832 | 60,263 | 76,678 | 24,417 |
| 1999/2000 | 24,417 | 90,270 | 39,978 | 74,709 |
| 2000/2001 | 74,709 | 55,280 | 83,650 | 46,339 |
| 2001/2002 | 46,339 | 19,706 | 18,998 | 47,047 |
| 2002/2003 | 47,047 | 27,427 | 23,818 | 50,656 |
| 2003/2004 | 50,656 | 55,915 | 77,309 | 29,262 |
| 2004/2005 | 29,262 | 96,203 | 10,521 | 114,944 |
| 2005/2006 | 114,944 | 47,620 | 20,000 | 142,564 |
| 2006/2007 | 142,564 | 27,500 | 68,000 | 102,064 |

Table 2a: Monthly wholesale Maize prices for Arusha Market (1990 to 2006)

| Maize Wholesale prices in Tshs per 100 kg bag | | | | | | | | | | | | | |
|---|--------|--------|--------|--------|---------|--------|--------|--------|--------|--------|--------|--------|--------|
| Market | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Arusha | 1990 | 1,900 | 1,900 | 1,900 | 1,900 | 1,900 | 1,900 | 1,850 | 1,650 | 1,700 | n.a | n.a | n.a |
| | 1991 | n.a | n.a | n.a | n.a | n.a | n.a | 5,045 | 4,450 | 4,300 | 4,110 | 5,450 | 6,043 |
| | 1992 | 6,150 | n.a | n.a | n.a | n.a | n.a | 5,730 | 5,638 | 5,500 | 5,480 | 5,471 | 5,507 |
| | 1993 | 5,733 | 5,638 | 5,528 | 5,063 | 5,680 | 5,721 | 5,327 | 5,500 | 5,500 | 4,956 | 5,325 | 6,480 |
| | 1994 | 8,375 | 8,500 | 8,450 | 9,450 | 11,250 | 8,514 | 7,100 | 6,500 | 6,280 | 6,600 | 6,675 | 7,388 |
| | 1995 | 7,264 | 7,175 | 7,478 | 6,978 | 6,821 | 6,715 | 5,967 | 5,154 | 5,000 | 5,182 | 5,423 | 5,350 |
| | 1996 | 7,457 | 8,022 | 8,417 | 9,340 | 9,800 | 10,333 | n.a | 6,467 | 6,364 | 6,423 | 7,086 | 7,500 |
| | 1997 | 11,800 | 10,393 | 11,182 | 12,455 | 12,154 | 13,414 | 12,643 | 11,333 | 11,982 | 10,821 | 8,857 | 9,262 |
| | 1998 | 9,327 | 9,300 | 8,800 | 8,533 | 7,883 | 7,320 | 7,885 | 8,300 | 8,423 | 10,910 | 16,964 | 16,167 |
| | 1999 | 16,750 | 17,577 | 17,833 | 17,200 | 18,731 | 20,000 | 13,227 | 12,464 | 10,885 | 10,838 | 12,436 | 12,038 |
| | 2000 | 11,500 | 11,792 | 11,769 | 11,883 | 13,300 | 14,455 | 13,250 | 12,692 | 12,125 | 12,167 | 12,800 | 13,409 |
| | 2001 | 13,208 | 13,500 | n.a | 12,850 | 10,955 | 8,143 | 7,627 | 7,444 | n.a | 7,300 | 7,825 | n.a |
| | 2002 | 14,000 | 13,250 | 13,409 | 13,438 | 13,415 | 10,833 | 8,500 | 8,938 | 9,700 | 10,000 | 10,767 | 10,250 |
| | 2003 | 11,091 | 11,000 | 11,814 | 14,944 | 15,633 | 15,278 | 15,333 | 17,318 | 16,808 | 16,643 | 18,125 | 21,643 |
| | 2004 | 26,000 | 25,875 | 25,577 | 26,150 | 19,269 | 18,154 | 17,208 | 17,327 | 18,667 | 19,017 | 17,758 | 16,400 |
| | 2005 | 18,000 | 16,500 | 18,500 | 185,000 | 22,000 | 52,000 | 21,000 | 17,000 | 17,000 | 17,000 | 18,000 | 23,000 |
| 2006 | 12,250 | 15,250 | 40,000 | 67,000 | 38,000 | 54,000 | 22,500 | 20,000 | 19,000 | 19,000 | 17,000 | 15,000 | |
| 2007 | 20,100 | 21,400 | 19,600 | 17,500 | 17,100 | 27,978 | 13,800 | 15,300 | 17,300 | 17,800 | 20,400 | 24,500 | |

Source Market Information and Promotion Section, Ministry of Industry, Trade and Marketing, Dar es Salaam

Table 2b: Monthly wholesale Maize prices for Dar es Salaam Market (1990 to 2006)

| Maize Wholesale prices in Tshs per 100 kg bag | | | | | | | | | | | | | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Dar es Saalam | 1990 | 2,429 | 2,339 | 2,567 | 2,510 | 2,891 | 2,900 | 3,150 | 2,620 | 2,650 | n.a | n.a | n.a |
| | 1991 | n.a | n.a | n.a | n.a | n.a | n.a | 5,538 | 5,300 | 5,445 | 5,655 | 5,764 | 5,870 |
| | 1992 | 6,492 | n.a | n.a | n.a | n.a | n.a | 5,708 | 5,422 | 5,480 | 5,680 | 5,579 | 6,646 |
| | 1993 | 7,292 | 7,173 | 7,477 | 6,490 | 5,963 | 5,894 | 5,764 | 5,938 | 6,000 | 5,911 | 6,245 | 7,680 |
| | 1994 | 8,980 | 10,083 | 10,154 | 11,640 | 11,133 | 9,267 | 8,614 | 8,667 | 9,038 | 9,592 | 10,120 | 11,333 |
| | 1995 | 11,925 | 11,745 | 11,142 | 11,511 | 11,543 | 9,438 | 7,792 | 7,900 | 8,543 | 9,417 | 10,723 | 11,550 |
| | 1996 | 13,558 | 15,355 | 16,538 | 18,872 | 15,900 | 12,927 | 9,700 | 10,369 | 10,764 | 9,077 | 9,214 | 9,380 |
| | 1997 | 11,558 | 13,686 | 14,636 | 14,291 | 14,523 | 13,764 | 13,800 | 14,314 | 13,800 | 13,914 | 14,714 | 15,808 |
| | 1998 | 14,318 | 15,500 | 16,000 | 14,667 | 14,042 | 10,154 | 10,346 | 11,925 | 13,538 | 14,540 | 18,179 | 21,400 |
| | 1999 | 21,067 | 20,262 | 23,720 | 21,600 | 17,862 | 17,123 | 14,900 | 13,853 | 13,508 | 12,938 | 11,714 | 11,515 |
| | 2000 | 11,700 | 12,685 | 12,638 | 12,828 | 13,125 | 13,500 | 14,083 | 14,654 | 14,708 | 13,250 | 13,077 | 15,545 |
| | 2001 | 17,000 | 16,667 | 15,000 | 16,500 | 14,333 | 10,423 | 9,231 | 9,192 | 9,550 | 9,583 | 10,744 | 13,220 |
| | 2002 | 17,317 | 17,750 | 17,867 | 16,625 | 15,500 | 15,000 | n.a | n.a | n.a | n.a | n.a | 11,250 |
| | 2003 | 14,242 | 14,082 | 15,692 | 17,556 | 16,022 | 16,889 | 17,250 | 18,818 | 18,625 | 18,750 | 18,000 | 21,714 |
| | 2004 | 32,167 | 29,115 | 26,514 | 23,550 | 16,462 | 12,304 | 15,608 | 16,646 | 17,615 | 18,038 | 16,029 | 16,622 |
| | 2005 | 16,500 | 15,750 | 17,500 | 57,500 | 19,500 | 19,250 | 17,750 | 17,000 | 16,000 | 17,500 | 18,250 | 26,000 |
| 2006 | 28,500 | 28,000 | 35,000 | 60,500 | 62,500 | 31,000 | 29,000 | 30,000 | 19,000 | 20,000 | 20,000 | 16,500 | |
| 2007 | 16,300 | 16,100 | 15,000 | 13,600 | 12,900 | 12,600 | 12,700 | 13,400 | 18,200 | 20,800 | 23,200 | 25,300 | |

Source Market Information and Promotion Section, Ministry of Industry, Trade and Marketing, Dar es Salaam

Table 2c: Monthly wholesale Maize prices for Mbeya Market (1990 to 2006)

| Maize Wholesale prices in Tshs per 100 kg bag | | | | | | | | | | | | | |
|---|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| | | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| Mbeya | 1990 | 1,916 | 1,547 | 1,667 | 1,805 | 1,814 | 1,640 | 1,563 | 1,425 | 1,417 | n.a | n.a | n.a |
| | 1991 | n.a | n.a | n.a | n.a | n.a | n.a | 2,927 | 2,642 | 3,050 | 3,244 | 3,385 | 3,286 |
| | 1992 | 3,863 | n.a | n.a | n.a | n.a | n.a | 3,546 | 3,194 | 2,986 | 3,200 | 4,028 | 4,315 |
| | 1993 | 4,396 | 4,556 | 5,281 | 4,297 | 3,995 | 3,231 | 3,000 | 3,000 | 3,390 | 3,713 | 4,022 | 4,260 |
| | 1994 | 6,200 | 6,000 | 5,765 | 5,911 | 6,500 | 5,500 | 5,264 | 5,417 | 5,546 | 5,691 | 6,460 | 6,864 |
| | 1995 | 7,400 | 7,082 | 7,518 | 6,950 | 6,208 | 5,854 | 5,355 | 4,690 | 5,179 | 5,810 | 6,169 | 7,280 |
| | 1996 | 8,370 | 8,000 | 9,231 | 9,867 | 8,714 | 7,182 | 5,000 | 5,385 | 6,000 | 6,400 | 6,600 | 6,533 |
| | 1997 | 6,409 | 7,064 | 8,455 | 9,864 | 8,625 | 8,000 | 7,450 | 8,667 | 8,600 | 8,691 | 9,000 | 9,462 |
| | 1998 | 9,944 | n.a | n.a | 8,714 | 7,489 | 6,575 | 7,458 | 8,583 | 9,954 | 10,000 | 11,307 | 15,000 |
| | 1999 | 17,125 | 16,577 | 17,580 | 14,089 | 10,138 | 8,931 | 8,338 | 8,500 | 8,677 | 8,167 | 8,000 | 8,423 |
| | 2000 | 7,955 | 7,192 | 7,192 | 8,049 | 6,992 | 6,692 | 6,775 | 6,200 | 6,017 | 6,000 | 6,000 | 6,143 |
| | 2001 | 6,167 | 6,000 | n.a | n.a | n.a | n.a | n.a | n.a | n.a | n.a | n.a | n.a |
| | 2002 | n.a | 18,222 | 18,318 | 15,300 | 10,738 | 8,525 | 10,892 | 11,000 | 11,620 | 12,292 | 12,722 | 12,500 |
| | 2003 | 11,882 | 13,182 | 13,025 | 13,888 | 10,143 | 10,063 | 11,400 | 11,878 | 11,425 | 12,443 | 12,625 | 14,800 |
| | 2004 | 16,563 | 18,300 | 20,143 | 16,400 | 12,962 | 8,777 | 10,750 | 11,364 | 11,161 | 12,365 | 12,479 | 11,250 |
| | 2005 | 21,750 | 31,250 | 10,750 | 12,000 | 9,250 | 13,000 | 13,000 | 12,250 | 12,500 | 15,000 | 15,500 | 20,500 |
| 2006 | 25,000 | 30,000 | 31,250 | 27,500 | 26,000 | 19,500 | 17,000 | 17,250 | 17,250 | 17,500 | 17,250 | 16,200 | |
| 2007 | 15,600 | 12,200 | 11,600 | 11,800 | 10,700 | 10,700 | 12,700 | 15,600 | 17,000 | 15,400 | 19,600 | 20,900 | |

Source Market Information and Promotion Section, Ministry of Industry, Trade and Marketing, Dar es Salaam

Table 2d: Monthly Exchange Rate 100 USD (1990 – 2006)

| Monthly Exchange rate USD 100 (1990 - 2006) | | | | | | | | | | | | |
|---|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
| 1990 | 19,510.00 | | | | | | | | | | | |
| 1991 | 21,920.00 | | | | | | | | | | | |
| 1992 | 29,770.00 | | | | | | | | | | | |
| 1993 | 40,530.00 | | | | | | | | | | | |
| 1994 | 51,000.00 | | | | | | | | | | | |
| 1995 | 57,500.00 | | | | | | | | | | | |
| 1996 | 59,000.00 | | | | | | | | | | | |
| 1997 | | | | | | 63,060.00 | 63,120.00 | 62,500.00 | 62,330.00 | 62,150.00 | 61,770.00 | 63,130.00 |
| 1998 | 63,590.00 | 65,730.00 | 66,860.00 | 66,390.00 | 66,360.00 | 66,230.00 | 66,720.00 | 66,830.00 | 66,950.00 | 67,410.00 | 67,620.00 | 67,920.00 |
| 1999 | 68,200.00 | 68,820.00 | 69,220.00 | 70,120.00 | 70,580.00 | 72,170.00 | 77,840.00 | 79,180.00 | 79,720.00 | 79,730.00 | 79,730.00 | 79,740.00 |
| 2000 | 79,900.00 | 80,020.00 | 80,070.00 | 79,970.00 | 79,950.00 | 79,960.00 | 79,940.00 | 79,930.00 | 79,930.00 | 80,190.00 | 80,260.00 | 80,330.00 |
| 2001 | 80,506.00 | 81,567.90 | 83,497.90 | 88,442.22 | 88,862.18 | 88,912.15 | 88,869.05 | 89,084.64 | 89,194.15 | 89,725.36 | 91,320.50 | 91,682.18 |
| 2002 | 92,470.00 | 95,534.89 | 96,856.15 | 97,852.40 | 98,247.23 | 95,829.15 | 94,801.61 | 96,704.05 | 97,368.80 | 97,749.68 | 98,555.90 | 97,854.18 |
| 2003 | 99,760.27 | 101,984.72 | 103,703.00 | 103,941.10 | 103,969.79 | 103,937.00 | 104,132.64 | 104,512.10 | 104,788.23 | 104,511.50 | 104,902.39 | 105,985.90 |
| 2004 | 108,268.70 | 110,856.20 | 110,824.78 | 111,100.68 | 111,508.14 | 111,415.00 | 110,164.52 | 108,684.95 | 107,277.95 | 106,221.40 | 105,885.29 | 104,980.91 |
| 2005 | 108,852.94 | 110,996.20 | 110,800.29 | 110,509.00 | 111,566.82 | 112,917.55 | 113,720.95 | 113,210.09 | 113,798.23 | 114,176.80 | 116,997.80 | 117,161.11 |
| 2006 | 117,674.95 | 118,892.65 | 121,160.09 | 122,524.15 | 124,199.95 | 125,346.68 | 126,693.40 | 129,958.86 | 131,306.05 | 126,818.80 | 130,181.86 | 127,521.05 |

Source: Computations from Central Bank of the United Republic of Tanzania data and BOT various reports

Note: From 1990 to 1996 data presented are annual averages.

Annex 4.

Uganda Maize Trade Country Profile

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Acknowledgements: Funding for this research was provided by Michigan State University under World Bank Project No. No. 7144132 *Strengthening Food Security in Sub-Saharan Africa through Trade Liberalization and Regional Integration* .

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LIST OF ACRONYMS

| | |
|--------|---|
| ACP | African Caribbean and Pacific Countries |
| AGOA | African Growth and Opportunity Act |
| COMESA | Common Market for East and Southern Africa |
| DRC | Democratic Republic of Congo |
| EAC | East African Community |
| IGAD | Inter- Governmental Authority for Development |
| MFPED | Ministry of Finance Planning and Economic Development |
| OAU | Organization of African Unity |
| RATES | Regional Agricultural Trade Expansion Support Program |
| UBOS | Uganda Bureau of Statistics |
| UPTOP | Uganda Programme for Trade Opportunities and Policy |
| WTO | World Trade Organisation |

1.0 INTRODUCTION

1.1 Background

Maize is the most important cereal crop in Uganda, in terms of household food security and surplus for income generation. Maize production provides employment to traders, millers, exporters, and transporters, making it an important crop for income generation for a number of players, providing a living for approximately 3 million households.

1.2 Maize production and exports

Maize production in Uganda is dominated by subsistence level farmers with small land holdings (0.2 – 0.5 ha). These small-scale farmers are characterized by limited use of improved inputs and lack of adequate post harvest equipment, although they contribute over 75% of the marketable maize surplus, which is marketed on individual basis. Lately, there are emerging commercial farmers characterized by land holdings of about 0.8 - 2.0 ha under maize production.

From table 1, it is evident that area planted with maize, production and quantity exported have been on the increase since 1990. This is due to the fact that maize has become a major non-traditional export crop due to liberalisation and the increasing need to diversify Uganda's exports, thus contributing to the country's foreign exchange earnings. The market for Uganda's maize is entirely regional, particularly Eastern and Southern African countries. The value of Uganda's maize exports increased for the period 1990 to 1995, and then declined sharply to as low as US \$ 2,437 in 2000. There have been fluctuations in value of maize exports for the period 2000 to 2006, Table 1. No maize imports have been recorded from the official statistics including those from the Ministry of Finance Planning and Economic Development (MFPED).

1.3 Maize markets, prices and Government interventions in procurement

1.3.1 Maize markets

Two markets were selected for the study, Kisenyi in Kampala and Mbale from the eastern part of the country.

(a) Kisenyi market

This is the main maize trading centre in Kampala, where maize is bought by millers or by large scale maize traders for export. This market accounts for about 50% of domestic maize trade. Maize milling is dominated by the Kisenyi Millers Association comprising of 200 fully paid members. The association was set up with the objective of linking sellers and buyers and it is also responsible for safeguarding the maize during the transaction process to ensure that it is correctly weighed and properly distributed to the various buyers. On average, this association purchases 200 Metric tones of grain per day throughout the year. The main distribution outlets include Congo, Sudan and large wholesalers in Kampala.

Table 1: Area planted, production, quantity and value of maize exported

| Year | Area planted ('000 hectares) | Production ('000 tonnes) | Export (tonnes) | Exports by value ('000 US \$) |
|------|------------------------------|--------------------------|-----------------|-------------------------------|
| 1990 | 401 | 602 | 26,733 | 3,318 |
| 1991 | 420 | 567 | 33,070 | 4,188 |
| 1992 | 438 | 657 | 29,623 | 3,894 |
| 1993 | 503 | 804 | 160,438 | 23,319 |
| 1994 | 563 | 850 | 99,511 | 28,666 |
| 1995 | 571 | 913 | 86,149 | 23,054 |
| 1996 | 584 | 759 | 87,464 | 18,143 |
| 1997 | 598 | 740 | 42,345 | 15,063 |
| 1998 | 616 | 924 | 33,164 | 9,359 |
| 1999 | 608 | 1,053 | 23,163 | 5,291 |
| 2000 | 629 | 1,096 | 8,741 | 2,437 |
| 2001 | 652 | 1,174 | 61,603 | 18,339 |
| 2002 | 676 | 1,217 | 59,642 | 10,609 |
| 2003 | 710 | 1,300 | 60,298 | 13,724 |
| 2004 | 750 | 1,080 | 90,576 | 17,896 |
| 2005 | 780 | 1,237 | 92,794 | 21,261 |
| 2006 | 819* | 1258* | 11,5259* | 24,114 |

* Quantities are estimates

Source: MFPED, *Statistical Abstracts (1990 – 2007)*

(b) Mbale market

This market was selected because it is close to Busia border and it is the major maize collecting centre in the eastern region where Kapchorwa district, a surplus area is located.

1.3.2 Maize Prices in the study markets

National statistics from the Ministry of Finance Planning and Economic Development (MFPED) give prices for maize meal and not grain. However, FOODNET Project which started in Uganda in 1999 and ended in 2006, provides prices for both grain and maize meal for the same period.

As illustrated in table 2, there was an increase of 160% in maize meal prices in Kampala markets during the period from 1990 to 1997. However, a steady price decline was then realised for the period from 1997 to 2003, and since then there has been a price increase up to 2006.

Table 2: Average yearly prices⁸ in Ush./kg of maize meal in Kampala

| Year | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 | 2003 | 2004 | 2005 | 2006 |
|-------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|
| Price | 257 | 292 | 527 | 403 | 408 | 447 | 536 | 751 | 742 | 710 | 693 | 669 | 601 | 739 | 756 | 764 | 861 |

Source: MFPED, *Background to the Budget (1990 – 2007)*

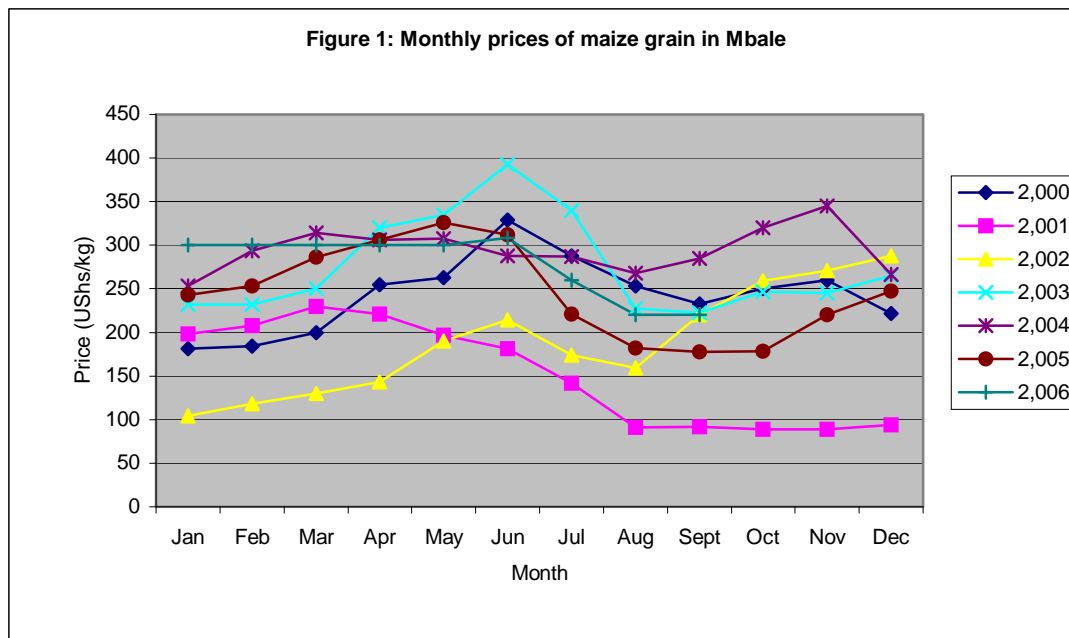
As presented in table 3, average annual prices of maize grain in Mbale fluctuate widely from 153 Ush./kg in 2001 to 295 Ush./kg in 2005. The initial high prices had stimulated production contributing to a significant price decline in 2001. The price fall caused growers to reduce production contributing to the subsequent price rise in 2002.

Table 3: Average monthly maize grain prices in Mbale in Ush./kg

| YE AR | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Average |
|-------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|---------|
| 2000 | 182 | 184 | 200 | 255 | 263 | 329 | 288 | 253 | 233 | 250 | 260 | 222 | 243 |
| 2001 | 198 | 208 | 230 | 221 | 197 | 181 | 142 | 91 | 92 | 89 | 89 | 94 | 153 |
| 2002 | 104 | 118 | 130 | 143 | 190 | 214 | 174 | 159 | 220 | 259 | 271 | 288 | 189 |
| 2003 | 232 | 232 | 250 | 320 | 335 | 393 | 340 | 228 | 223 | 247 | 245 | 265 | 276 |
| 2004 | 253 | 294 | 314 | 306 | 308 | 288 | 287 | 268 | 285 | 320 | 345 | 266 | 295 |
| 2005 | 243 | 253 | 286 | 306 | 326 | 312 | 221 | 182 | 178 | 178 | 220 | 248 | 246 |
| 2006 | 300 | 300 | 300 | 300 | 300 | 308 | 260 | 220 | 220 | | | | 279 |

Source: Compiled from FOODNET reports

⁸ These are average prices computed from Annex 1.



From figure 1, it is evident that prices of maize grain are lowest during the December – January period. This is consistent with main harvest period of January to March. Average prices then fall in August to September when the second harvest takes place. Prices are highest from June to July when exports to Kenya are usually at their highest demand.

Table 3a: Average monthly maize grain prices in Mbale

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sept | Oct | Nov | Dec | Average |
|------|-----|-----|-----|-----|-----|-----|-----|-----|------|-----|-----|-----|---------|
| 2000 | 182 | 184 | 200 | 255 | 263 | 329 | 288 | 253 | 233 | 250 | 260 | 222 | 243 |
| 2001 | 198 | 208 | 230 | 221 | 197 | 181 | 142 | 91 | 92 | 89 | 89 | 94 | 153 |
| 2002 | 104 | 118 | 130 | 143 | 190 | 214 | 174 | 159 | 220 | 259 | 271 | 288 | 189 |
| 2003 | 232 | 232 | 250 | 320 | 335 | 393 | 340 | 228 | 223 | 247 | 245 | 265 | 276 |
| 2004 | 253 | 294 | 314 | 306 | 308 | 288 | 287 | 268 | 285 | 320 | 345 | 266 | 295 |
| 2005 | 243 | 253 | 286 | 306 | 326 | 312 | 221 | 182 | 178 | 178 | 220 | 248 | 246 |
| 2006 | 300 | 300 | 300 | 300 | 300 | 308 | 260 | 220 | 220 | | | | 279 |

Source: Compiled from FOODNET Commodity prices reports

Table 3b: Monthly wholesale price of maize flour in Mbale

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Average |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|---------|
| 2001 | 353 | 353 | 461 | 365 | 436 | 335 | 305 | 260 | 203 | 180 | 176 | 180 | 300 |
| 2002 | 179 | 215 | 281 | 238 | 364 | 348 | 368 | 310 | 318 | 368 | 425 | 435 | 321 |
| 2003 | 405 | 385 | 481 | 483 | 628 | 578 | 635 | 520 | 415 | 405 | 423 | 410 | 481 |
| 2004 | 416 | 470 | 502 | 500 | 492 | 462 | 480 | 372 | 464 | 507 | 548 | 485 | 475 |
| 2005 | | 428 | 474 | 500 | 528 | 508 | 447 | 332 | 318 | 318 | 400 | 463 | 429 |
| 2006 | 570 | 600 | 600 | 600 | 540 | 492 | 432 | 280 | 285 | | | | 489 |

Table 3c: Monthly wholesale price of maize grain in Kisenyi - Kampala

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Average |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|
| 2002 | | | | | | | 215 | 151 | 199 | 250 | 261 | 300 | 229 |
| 2003 | 220 | 223 | 223 | 288 | 314 | 344 | 415 | 281 | 238 | 239 | 249 | 253 | 274 |
| 2004 | 239 | 278 | 285 | 300 | 310 | 301 | 295 | 303 | 288 | 283 | 338 | 349 | 297 |
| 2005 | 263 | 240 | 293 | 305 | 358 | 338 | 315 | 240 | 243 | 243 | 243 | 240 | 276 |
| 2006 | 268 | 259 | 339 | 360 | 409 | 418 | 283 | | | | | | 333 |

Table 3d: Monthly wholesale price of maize flour in Kisenyi - Kampala

| Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec | Average |
|------|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|-----|------------|
| 2002 | | | | | | | 408 | 323 | 378 | 423 | 455 | 485 | 412 |
| 2003 | 473 | 463 | 465 | 543 | 578 | 600 | 663 | 630 | 520 | 533 | 505 | 500 | 539 |
| 2004 | 495 | 505 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 500 | 580 | 598 | 515 |
| 2005 | 499 | 437 | 450 | 490 | 533 | 565 | 520 | 448 | 438 | 415 | 400 | 405 | 466 |
| 2006 | 450 | 468 | 550 | 598 | 708 | 700 | 665 | | | | | | 591 |

Source: Compiled from FOODNET Commodity prices reports

A comparison of monthly prices between the two major wholesale markets in Uganda indicates that for both grain and flour, Kampala - Kisenyi prices were higher than Mbale prices, table 4. Price differences of maize flour varies between Ush.50 and 100, an average of 15% price increase. Differences in grain prices are smaller ranging between 0 and 50 Ush./kg, an average of 11% price increase. The small price difference for both grain and flour is attributed to the Kenyan demand.

Table 4: Average annual prices Ush./kg in the study markets

| Year | Average prices of maize flour | | Average prices of maize grain | |
|------|-------------------------------|-------|-------------------------------|-------|
| | Kisenyi - Kampala | Mbale | Kisenyi - Kampala | Mbale |
| 2000 | | | | 243 |
| 2001 | | 300 | | 153 |
| 2002 | 412 | 321 | 229 | 189 |
| 2003 | 539 | 481 | 274 | 276 |
| 2004 | 515 | 475 | 297 | 295 |
| 2005 | 466 | 429 | 276 | 246 |
| 2006 | 591 | 489 | 333 | 279 |

1.3.3 Government interventions in procurement and stock changes

The Uganda Commodity Exchange (UCE)

UCE based in Kampala is the registered brokerage institution engaged in bringing together maize sellers (who are mainly urban traders and commercial farmers) and maize buyers (local and foreign companies). Given this important role, UCE is also involved in the identification and selection of traders and brokers who are actively engaged in grain trades. UCE is the independent licensing Authority appointed through the Warehouse Receipts System Act 2006 and related WRS Regulations of 2007 to license warehouses to issue Warehouse Receipts. As the assigned Authority, the UCE has prepared and now published Licensing Conditions in respect of warehouse keepers and other parties described in the law who wish to issue Warehouse Receipts. UCE is currently accepting applications for licensing from warehouses able to store agricultural commodities including maize.

1.3.4 Transport costs, bagging and handling

Currently from Mbale to Kampala, traders spend Ush 3,000 – 4,000 per 100 kg bag that means it costs between Ush 30 and 40 per kg. The current high cost is attributed to high fuel prices.

For each 100 kg sack;

- Packing material costs Ush 600
- On-farm loading costs Ush 400
- In Kisenyi, brokers pay Ush 500 per sack, this includes off-loading fee of Ush 300 per sack and the Ush 200 is paid for hiring a weighing scale.
- Ush 5,000 is spent on hiring a weighing scale to weigh 100 bags, however if one has less than 100 bags, the least charged for hiring a weighing scale is Ush 2,000

1.3.5 Storage capacity and capacity utilisation

Producers and traders are constrained by lack of storage facilities and thus products are often sold immediately. Maize is mainly stored at the markets in bags on the ground. Inadequate storage facilities and lack of capital also hinders the traders from benefiting from time arbitrage when the prices go up. Post harvest handling and storage of maize has shifted from farmers to middlemen and farmers still receive little for their produce compared to the terminal markets.

1.4 Maize flow channels

In Uganda, there are two broad channels through which maize flows from the farmer to the final consumer, that is; the grain and flour channels (RATES, 2003). The grain chain forms the backbone of maize business and maize is sold in grain form throughout this channel. The maize grain channel is the most reliable channel for farmers given that it handles between 50-75% of the domestically traded maize and 100% of exported maize. The grain channel is made up of many participants, which include farmers, traders and commodity brokers. Small-scale subsistence farmers sell off most of their surplus maize to the rural traders immediately after harvest given that they have limited income generating enterprises and inadequate storage facilities. Unlike the small-scale subsistence farmers, commercial farmers hoard their maize produce so as to sell to urban traders to get better prices. According to RATES (2003), traders can be categorized into rural, urban and large-scale traders. Rural traders constitute about 90% of maize traders, while urban traders account for about 10% of all maize traders.

The maize meal channel focuses on maize flour. Here, maize grain is converted into flour and other by products. This channel is basically dominated by millers among farmers and traders. RATES (2003) categorized the maize grain millers into small-scale, medium scale and large-scale. Fifty percent of the total volume of milled maize is handled by the small scale millers who constitute 85% of the maize millers.

1.4.1 Major maize flows within the country

Maize is a common grain crop grown virtually in all districts of Uganda but outstanding districts include Iganga, Mbale, Kasese, Masindi, and Kapchorwa (Elepu 2006). Of recent, many farmers from the districts of Mubende, Kiboga, Lira, Apac, Mbarara, Masaka, Rakai, Kyenjojo, Kabarole, Kamwenge and Hoima have also picked up maize growing. Unlike some regions, which have, varying production years (Normal years, drought years and bumper harvest years), Uganda's maize flows can best be described basing on seasons. In the districts of Iganga, Kasese and Masindi there are two maize flows per year which occur after January-March and July-August peak harvest seasons while the districts of Kapchorwa and Mbale have a single maize flow in a year and it comes after the October-December peak harvest season.

Table 5: Estimated production and surplus by major leading districts (MT)

| Leading district(s) | Production (MT) | Marketable surplus (MT) |
|----------------------------|------------------------|--------------------------------|
| Iganga, Bugiri, Kamuli | 120,000 | 90,000 |
| Kapchorwa, Mbale | 100,000 | 70,000 |
| Masindi, Hoima | 80,000 | 65,000 |
| Kabarole, Kamwenge, Kasese | 40,000 | 30,000 |
| Total | 340,000 | 255,000 |

Source: *Elepu, 2006*

World Food Program (WFP) is the biggest consumer in the domestic market of maize and its estimated annual purchase is about 120,000 metric tons. WFP is supplied by Farmers' associations and local traders from surplus districts of Kapchorwa, Mbale and Masindi.

1.4.2 Major maize flows out of the country

Maize flows from Uganda end up in the regional market, which comprises of Eastern and Southern African countries. Malawi, Zambia and Zimbabwe are the main export markets for Ugandan maize. The good regional market is attributed to the fact that maize is regarded as a staple food crop in the Eastern and Southern African countries. Also, the persistent unfavourable climate and low levels of soil nutrition in a number of countries have led to the high demand for Uganda's maize.

Uganda's maize out flows occurs during the months of May – September when the maize stocks are low. Uganda's ability to supply the regional market is due to the fact that she has two good maize harvest seasons each year.

Table 6: Maize Exports by Market Segment: 1997-2002

| Volume and Value | 1997 | 1998 | 1999 | 2000 | 2001 | 2002 |
|----------------------------------|---------------|---------------|---------------|---------------|---------------|---------------|
| Volume (MT): | 52,000 | 54,667 | 80,000 | 69,548 | 85,810 | 60,000 |
| Relief Aid (WFP) | 8,394 | 39,542 | 29,456 | 24,846 | 36,272 | 22,663 |
| Kenya | 43,606 | 15,125 | 50,544 | 44,702 | 39,858 | 16,337 |
| Zambia | * | * | * | * | 9,680 | 21,000 |
| Value (US\$ in millions): | 11.024 | 10.660 | 14.800 | 11.835 | 10.731 | 7.330 |
| Relief (WFP) | 2.194 | 9.478 | 5.800 | 2.939 | 4.367 | 3.993 |
| Kenya | 8.830 | 1.182 | 9.000 | 8.892 | 4.944 | 1.027 |
| Zambia | * | * | * | * | 1.060 | 2.310 |

* No exports were made to the Southern Market (Zambia)

Source: RATES, 2003

Uganda has a high maize export capacity potential estimated between 100,000–150,000 MT per annum although her maize export performance within the region between 1997 and 2002 has not been consistent. The inconsistent export volume is attributed to the low level of market penetration such that only 50% of exportable maize is actually being exported.

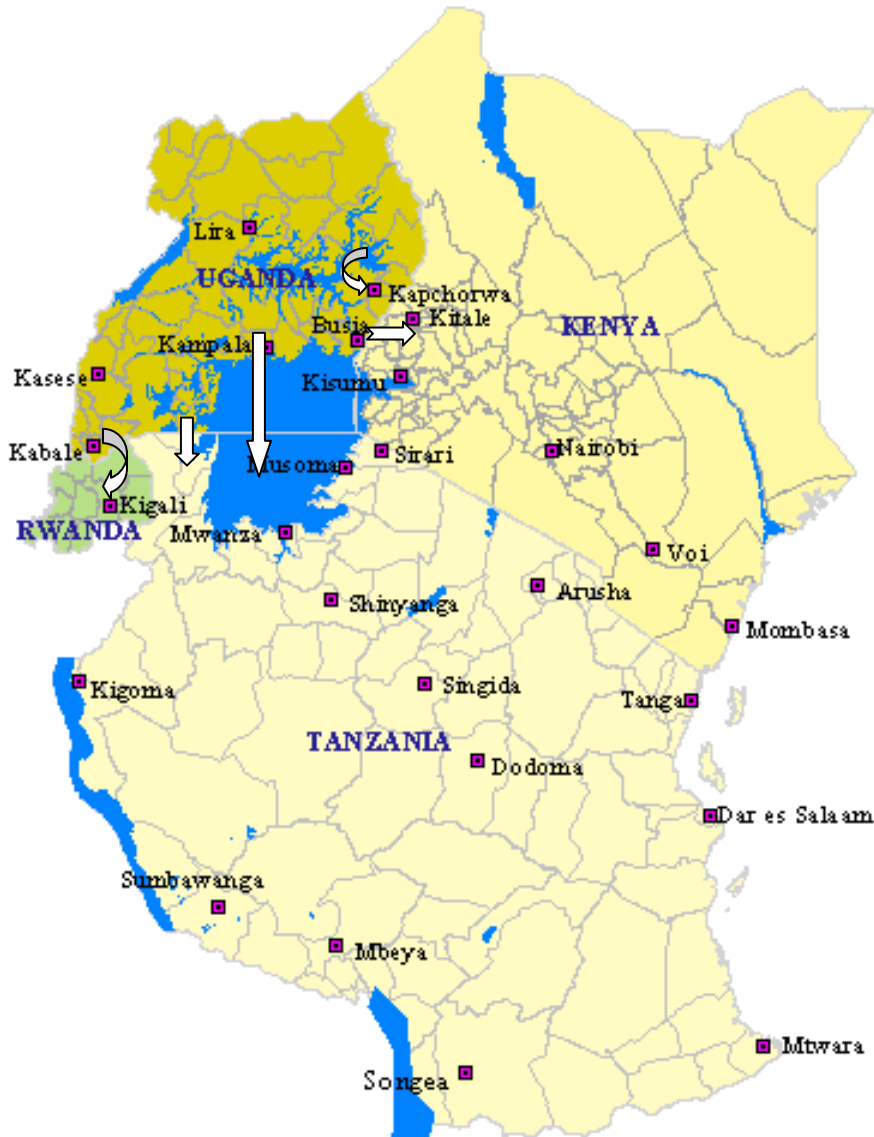
The Southern African market (especially Zambia) also takes some good amount of maize grain but this export market is not regular, given that it occurs when there is abundant production. For instance, during 2001 – 2002 period when there was a bumper harvest, Uganda supplied about 30, 000 MT of maize to Zambia through Uganda Grain Traders (UGT) Ltd.

Relief Aid market

Uganda also exports relief food for the World Food Program in the Central and East African region. Between 1997 and 2002, this maize export market accounted for approximately 8,394 – 39,542 MT of maize thereby accounting for about 40-50% of the maize export market and according to RATES (2003), it is the most assured maize market given for good quality maize.

In summary, of the total marketable maize surplus (15% of total maize produced), cross border traded maize to Kenya assumes 8% of output, 6% of the output goes to Relief Aid while 1% of the total marketable maize surplus is exported to the Southern market (Zambia).

Fig.2: Map showing main Regional maize flow routes within and across Ugandan Borders.



Source: Foodnet, 2004

2.0 EVOLUTION OF POLICIES AFFECTING MAIZE CROSS BORDER TRADE

In early 1990s, the government Uganda liberalized marketing of food crops thereby abolishing the monopoly system where by it was only the responsibility of government parastatals like Produce Marketing Board (PMB) and cooperatives to market produce. Liberalization of the economy also removed price controls and export taxes and hence reduced Uganda's trade barriers. Some of the policies affecting maize trade include

2.1 *Import policies*

All goods imported into Uganda are subject to: customs tariffs, an import license commission, a withholding tax, and internal taxes such as excise duties and the value added tax (VAT), which apply equally to imports and domestic products. Following the revival of the EAC Customs Union (CU) Protocol, there have been changes in the country's tariff structure. Under EAC CU, Uganda has harmonised all her internal taxes with her partners in the region.

Customs Tariff and Non-Tariff Barriers

In 2000, the three countries of East Africa, namely, Uganda, Kenya and Tanzania revived the EAC as a way of promoting development in trade and regional integration. This was followed by the launching of the EAC in 2001; the signing of the protocol for establishment of the EAC Customs Union in 2004; and the commencement of the EAC Customs Union operations in January 2005. Before the EAC was revived, there were several trade policies and regulations governing commodity trade in the region, including export and import permits, tariff and non-tariff charges, quality and safety standards, phytosanitary requirements, and customs clearance procedures. For example, Uganda charged Value Added Tax (VAT) of 17% and withholding tax of 4% on maize imports, while Kenya levied normal duty of 25% and suspended duty of 50%, giving a sum total of 75% as total duty applicable on maize imports.

After ratification of the Customs Union, some tariffs were reduced while others were totally abolished as a step towards harmonizing trade policies and taxes within the EAC region. For example, Uganda, Kenya and Tanzania have all adopted zero rate VAT on maize imports, and Kenya's suspended duty has now been phased out and no other non-tariff charges will be applied as a tool for regulating maize imports. Member countries have committed to charging preferential tariffs on goods originating from the region, and to the prevailing most favored nation (MFN) tariffs. Although Uganda, Kenya and Tanzania are still charging import tariffs (3 to 5%) and non-tariffs (import declaration fees and import commission of 2 to 2.75%) on maize imports, they are committed to progressive zero tariff reduction over a period of 6 years.

Imports of maize from COMESA countries attract 4% tariff, while non-COMESA maize imports are charged 7%. In addition, maize importers pay import license commission of 2% and a withholding tax of 4%. This implies that effective tariffs on maize imports from COMESA and non-COMESA countries total to 10% and 13% respectively.

2.2 *Export policies*

2.2.1 Export Duty

Consistent with its commitment to all liberal trade policy, Uganda has emphasized that her maize export sector remains as open as possible. Uganda has no maize export taxes, charges or levies. Given this observation, it is imperative to argue that exporters of Uganda's maize grain are largely regulated by the importing countries. Despite the fact that no policy per se discourages maize exportation, exporters must fulfill some obligations before they can export.

To export maize, one must have a fumigation certificate, a phytosanitary certificate, a quality standards certificate. Maize destined for the COMESA market, a COMESA certificate of Origin is a pre-requisite and exporters must fill a customs' CD3 and single entry form as illustrated below.

a) Fumigation

Government has gazetted some companies to fumigate maize for export. These fumigation companies are registered with Agricultural Chemicals Board and most of them are found in Kampala. The chemical used for maize fumigation is hydrogen phosphide (PH₃) and the recommended rate of application is 3gms per cubic meter in a period of 120 hours. After fumigation, the maize exporter is issued with a fumigation certificate only after 72 hours have elapsed.

b) Certificate of origin

Maize exporters are also supposed to fill a COMESA certificate of origin before they export their maize. The COMESA certificate is issued by the Uganda Export Promotion Board (UEPB), based in Kampala. During packing, maize bags are supposed to bear country of origin label, name of exporter and batch number to ensure traceability.

c) Standards

After obtaining both the fumigation and the COMESA certificates, a maize exporter contacts the Uganda National Bureau of Standards (UNBS) to have the maize consignment inspected. UNBS has to inspect all the maize destined to export markets for quality standards – moisture content, pest damage, foreign material, aflatoxins, and physical appearance of grain. Following confirmation of the quality of maize consignment, the exporter is then issued with a quality standard certificate. The quality standard certificate is then issued both in Kampala and at a few border points which have been authorized to do so.

d) Phytosanitary

The phytosanitary inspection is done by the Ministry of Agriculture, Animal Industry and Fisheries (MAAIF) in either Entebbe, Kampala or at the various border points within the country. During this inspection, visual observations, guided by the FAO International Plant Protection Convention (IPPC) guidelines, is done to validate the moisture content, pests, chemical levels and live maize weevils in the maize consignment. After the inspection, the maize exporter is issued with a phytosanitary certificate.

Informal cross border traders may not have all the above documents to transact their maize imports and exports business. However, the Uganda Revenue Authority requires them to fill the CD3 and CD63 forms for exports and imports respectively, and must be accompanied by a Phytosanitary certificate from MAAIF.

2.2.2 The Export Refinancing Scheme (ERS)

This was introduced in 1991, to diversify and expand exports in order to increase foreign exchange earnings, secondly to ensure availability of institutional credit resources to meet the needs of exporters. It was intended to benefit exporters of crop products among others. Two types of borrowing schemes are available:

- short term loans for periods not exceeding 180 days and the facility caters for exporters to meet both pre-shipment and post-shipment costs such as purchase of commodities, transport from source to port of shipment, insurance, packaging, handling charges, cleaning and fumigation services, inspection fees, labour charges among others.
- medium term loans for a period of 1-5 years, with a grace period of one year and facility covers the infrastructure developments such as construction of cold storage facilities, grain storage warehouses, cleaning, drying and grading equipment.

ERS funds are lent out through banks and credit institutions operating in Uganda and willing to participate in export finance..

2.2.3 The Export Credit Guarantee Scheme (ECGS)

In 2001, the government of Uganda established ECGS in response to concerns that Uganda's exporters lack access to reasonably priced financing to meet their pre-shipment costs. This scheme seeks to encourage local financial institutions to extend pre-shipment credit to Ugandan firms who export non-traditional exports. Access to the loans is through accredited commercial banks - the participating financial institutions (PFI)- which act as lender, while the bank of Uganda (BOU) is the guarantor. Under the scheme, the lender and guarantor take the credit risk of the maize exporter in Uganda rather than the importer (buyer) overseas. It is also geared to short-term loans only, with a maximum of 180 days. Operationalization of this policy is still on limited scale.

2.3 *Cross-border trade*

Maize export through cross-border trade is both formal and informal cross-border trade. For now over a decade, Kenya is regarded as the number one export market for Ugandan maize since it accounts for about 50% of the total maize exports. Informal cross border trade, is characterised by low quality maize, that is wet and unclean due to poor storage and handling by producers and traders in the lower end of the value chain. According to UBOS (2007), among the major agricultural and industrial products informally traded during 2006, maize exports to Kenya estimated at 123,173 tonnes fetched Uganda the highest amount of returns (close to US\$20 million). With Tanzania, maize was also the major agricultural commodity informally traded and during 2006, about 30,288 tones were estimated to having been exported thereby generating US\$ 5.8 million in monetary terms. UBOS (2007) asserts that informal trade with Rwanda, a new member to the East African community greatly increased since 2005. It is further noted that despite the many agricultural products informally exported to Rwanda, maize was the leading commodity and it was estimated that in 2006, maize alone fetched US \$ 1.6 million (7,697 tones) among other products like root crops, beans, bananas and ground nuts which earned US\$1.4 million, US\$ 1.1 million, US\$ 0.9 million and US\$ 0.3 million respectively. Informally, maize is generally the major agricultural product traded across borders within the region. The overall maize informal exports in 2006 fetched Uganda US\$ 27,028,750 thereby accounting for 11.7 % share of all informally traded products.

2.4 Government participation

The government of Uganda has played a key role in influencing the marketing of maize before and after the liberalization of agricultural marketing. Before 1990s, the government's role was more direct whereby it imposed price controls, suppressed private sector maize trade and restricted internal and external trade and thus controlled a larger share of the marketable output of maize. However, with liberalisation, it is now apparent that the state control of marketing is largely through imposing policies that ensure more private participation, competitiveness and access to resources by traders to ensure more trade within and outside Uganda.

Uganda's maize exports are influenced by both internal and external factors. Government policy has a significant impact on the pattern of maize trade and therefore on exports. Uganda has adopted trade instruments used to stimulate the development of maize trade, and these are largely to promote export trade. Some of these instruments are:-

- **Registration**

In Uganda, all traders of agricultural commodities must be registered with the Ministry of Justice and licensed by the competent authorities. This implies that maize traders must as well be compliant with this policy regulation. Applicants for registration and licensing must produce a Tax Identification Number (TIN) from Uganda Revenue Authority (URA). This helps to improve and expand the tax base of Uganda's revenue.

▪ **Standards**

According to the stipulated standard, maize grain that is ready for export or consumption locally must be free from toxic agro-chemicals, injurious pests and disease, and any other foreign matter. This policy prescription is meant to ensure consumer protection and any maize trader who fails to comply could be shut out of markets if they do not conform to the accepted standards of the given markets. In practice, therefore, conformity with such standards is a requirement for entry into maize grain markets. In Uganda, the body responsible for promoting standardization is the Uganda National Bureau of Standards (UNBS), under the ministry of Tourism, Trade and Industry (MTTI). MTTI is mandated to facilitate the flow of standardization of maize, testing, inspection, quality assurance, metrology, dissemination of standards information to maize traders, and cooperation with partners locally and internationally. Maize traders must comply with the WTO agreement on technical barriers that specify the rules associated with the application of sanitary and phytosanitary measures

Uganda participates in regional trade agreements namely the Common Market for Eastern and Southern Africa (COMESA) and the East African Community (EAC).

2.5 The trade policy

The Government of Uganda's trade policy largely aims at creating competitiveness among agricultural commodity exporters through the enhancement of value-addition, access to credit, and ensuring fair taxing systems. Given occurrences of trade risks, some of Uganda's trade policy also ensures that traders' activities are safeguarded against risks and uncertainties through the creation of insurance opportunities for traders

The specific objectives of the trade policy are to

- increase the competitiveness of trade in agricultural commodities as well as raising the efficiency of trade in domestic markets,
- increase integration of Uganda's trade activities into regional, international and global economies,
- stimulate domestic and foreign investment in agricultural-oriented activities, to promote the growth and diversification of exports of agricultural commodities, and
- Ensure broad distribution of the benefits of the economic growth and diversification of the traded sector, with the ultimate aim of reducing poverty.

2.6 Export Promotion

The Uganda Export Promotion Board (UEPB) provides trade and market information on maize process, product development, markets and other related information. UEPB is involved in identification of maize market opportunities and formulation of appropriate market strategies, including designing promotional programmes for value-added products, conducting market

surveys and outreach – activities (such as outward trade missions, participation in trade fairs, buyer – seller meetings, publications and publicity materials etc) as part of market development.

- **The National Export Strategy (NES)**

The development and growth of exports is key to the Government’s agenda of poverty alleviation. Central to this was the development of a national export strategy (NES). A National Export Strategy-2008-2012 is a country’s blueprint for its export development agenda and it lays down the principles, policies, targets and general action plans to achieve sustainable growth of exports. In Uganda, like many developing countries, the export sector has been operating without NES. This, and the lack of sector-specific strategies, has contributed to the absence of clearly defined policies that target the development of the export sector.

The NES was launched in 2007 and it is intended to achieve a strategically diversified range of products from agricultural commodities with significant value added, in the quality and volumes that allow for a competitive presence in international markets; as well as promoting the generation of export earnings over and above any import requirements. It is not an isolated strategy but fits into the existing National policy/planning frameworks like the Poverty Eradication Action Plan (PEAP) and National Trade Policy (MTTI, 2007).

The vision of the NES is to see a dynamic and competitive export-driven economy national prosperity and development. The Strategy focuses on 12 sectors among which are cereals, which includes maize.

References:

1. Elepu G, 2006: Value chain analysis for the maize sector in Uganda.
2. Foodnet and National Information Market systems, 2003: Regional Agricultural Trade Intelligence Network, Food trade Bulletin for East Africa. Issue 5
3. Foodnet, 2004: Regional Trade Intelligence Network. Food Trade Bulletin for East Africa; Issue 8
4. MFPED, Statistical Abstracts (1990 – 2007)
5. MFPED, Background to the Budget (1990 – 2007)
6. RATES, 2003: Maize Market Assessment and Baseline Study for Uganda
7. UBOS, 2007: The informal cross border trade survey report 2006

ANNEXES

Annex 1: Average maize meal price/ kg in Kampala 1990 - 2006 (1Q)

| Period | | Price/ kg Ush |
|--------|-------------|------------------|
| 1990 | 1st Quarter | 294.0 |
| | 2nd Quarter | 250.7 |
| | 3rd Quarter | 220.0 |
| | 4th Quarter | 264.0 |
| 1991 | 1st Quarter | 289.3 |
| | 2nd Quarter | 290.0 |
| | 3rd Quarter | 292.4 |
| | 4th Quarter | 296.7 |
| 1992 | 1st Quarter | 363.9 |
| | 2nd Quarter | 677.8 |
| | 3rd Quarter | 602.8 |
| | 4th Quarter | 455.6 |
| 1993 | 1st Quarter | 402.8 |
| | 2nd Quarter | 393.4 |
| | 3rd Quarter | 400.0 |
| | 4th Quarter | 419.4 |
| 1994 | 1st Quarter | 483.3 |
| | 2nd Quarter | 519.4 |
| | 3rd Quarter | 492.8 |
| | 4th Quarter | 408.3 |
| 1995 | 1st Quarter | 413.3 |
| | 2nd Quarter | 456.7 |
| | 3rd Quarter | 453.3 |
| | 4th Quarter | 464 |
| 1996 | 1st Quarter | 491.7 |
| | 2nd Quarter | 514.3 |
| | 3rd Quarter | 514 |
| | 4th Quarter | 623.3 |
| 1997 | 1st Quarter | 630.6 |
| | 2nd Quarter | 777.8 |
| | 3rd Quarter | 822.2 |
| | 4th Quarter | 772.2 |
| 1998 | 1st Quarter | 747 |
| | 2nd Quarter | 744 |
| | 3rd Quarter | 722 |
| | 4th Quarter | 756 |
| 1999 | 1st Quarter | 711 |
| | 2nd Quarter | 703 |
| | 3rd Quarter | 689 |
| | 4th Quarter | 736 |
| 2000 | 1st Quarter | 661 |
| | 2nd Quarter | 700 |
| | 3rd Quarter | 711 |
| | 4th Quarter | 700 |

| | | |
|------|-------------|-------|
| 2001 | 1st Quarter | 672 |
| | 2nd Quarter | 683 |
| | 3rd Quarter | 678 |
| | 4th Quarter | 644 |
| 2002 | 1st Quarter | 538.9 |
| | 2nd Quarter | 588.9 |
| | 3rd Quarter | 600.0 |
| | 4th Quarter | 677.8 |
| 2003 | 1st Quarter | 694.4 |
| | 2nd Quarter | 711.1 |
| | 3rd Quarter | 822.2 |
| | 4th Quarter | 727.8 |
| 2004 | 1st Quarter | 744.4 |
| | 2nd Quarter | 750.0 |
| | 3rd Quarter | 744.4 |
| | 4th Quarter | 783.3 |
| 2005 | 1st Quarter | 761.1 |
| | 2nd Quarter | 750.0 |
| | 3rd Quarter | 766.7 |
| | 4th Quarter | 777.8 |
| 2006 | 1st Quarter | 783.3 |
| | 2nd Quarter | 930.6 |
| | 3rd Quarter | 872.2 |
| | 4th Quarter | 858.3 |

Annex 2: Average retail price of maize in major import markets (Nairobi)

| Year | Maize Flour (Ksh per Kg) | Maize grain (Ksh per Kg) |
|------|--------------------------|--------------------------|
| 1990 | 5.14 | 6.5 |
| 1991 | 5.92 | 6.29 |
| 1992 | 11.25 | 8.54 |
| 1993 | 13.88 | 12.25 |
| 1994 | 20.5 | 17.4 |
| 1995 | 15.96 | 12.58 |
| 1996 | 16.92 | 13.67 |
| 1997 | 21.5 | 19.34 |
| 1998 | 20.11 | 16.7 |
| 1999 | 23.19 | 19.7 |
| 2000 | | |
| 2001 | | |
| 2002 | | |
| 2003 | | |
| 2004 | | |
| 2005 | | |
| 2006 | | |

Source: Kenya Statistical Abstracts

Annex 3: Annual foreign exchange rates (Uganda Shillings per US \$)

| Bureau weighted Average | | |
|--------------------------------|--------------------|---------------------|
| Year | Buying Rate | Selling Rate |
| 1990 | 430.42 | 430.42 |
| 1991 | 891.09 | 954.23 |
| 1992 | 1214.79 | 1259.92 |
| 1993 | 1201.33 | 1233.02 |
| 1994 | 986.67 | 1020.13 |
| 1995 | 963.35 | 988.56 |
| 1996 | 1043.31 | 1065.19 |
| 1997 | 1073.67 | 1095.86 |
| 1998 | 1230.23 | 1245.62 |
| 1999 | 1448.23 | 1467.54 |
| 2000 | 1636.29 | 1656.95 |
| 2001 | 1742.39 | 1766.91 |
| 2002 | 1790.54 | 1802.66 |
| 2003 | 1955.76 | 1970.59 |
| 2004 | 1801.42 | 1821.75 |
| 2005 | 1775.71 | 1782.67 |
| 2006 | 1822.86 | 1829.26 |

Annex 4: Composite CPI of Food Crops in Uganda

| Year | CPI | |
|-------------|------------|--|
| 1990 | 109.5 | Weights: 33.6 Base: 1989 = 100 |
| 1991 | 134.0 | |
| 1992 | 240.1 | |
| 1993 | 218.5 | |
| 1994 | 255.0 | |
| 1995 | 247.5 | |
| 1996 | 258.7 | |
| 1997 | 327.7 | |
| 1998 | 311.3 | |
| 1999 | 100.0 | Weights: 27.4 Base: 1997/98 = 100 |
| 2000 | 101.8 | |
| 2001 | 92.3 | |
| 2002 | 84.4 | |
| 2003 | 106.1 | |
| 2004 | 108.3 | |
| 2005 | 129.6 | |
| 2006 | 144.2 | |

Annex 5.

Malawi Maize Trade Country Profile

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June 2008

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Acknowledgements: Funding for this research was provided by Michigan State University under World Bank Project No. No. 7144132, *Strengthening Food Security in Sub-Saharan Africa through Trade Liberalization and Regional Integration.*

List of Acronyms

| | |
|---------|---|
| ADMARC | Agricultural Deelopment and Marketing Corporation |
| APIP | Agricultural Productivity Investment Programme |
| FEWS | Famine Early Warning System |
| GDP | Gross Domestic Product |
| MVAC | Malawi Vulnerability Assessment Committee |
| NFRA | National Food Reserve Agency |
| NGO | Non-Governemntal Organization |
| NSO | National Statistics Office |
| SARRNET | Southern African Root Crops Research Network |
| SGR | Strategic Grain Reserve |
| WFP | World Food Programme |

Introduction

Agriculture remains the most important sector supporting economic growth and development in Malawi. Depending on climatic conditions, the sector usually accounts for more than one-third of GDP and over 90% of export earnings. The sector employs nearly half of those in formal employment, and directly and indirectly supports an estimated 85% of the population. The main food crop in Malawi is maize supplemented by cassava, sorghum, millet, pulses, rice, vegetables and fruits. Tobacco is the largest export crop, followed by tea, sugar and cotton. The country is almost entirely reliant on favorable climatic conditions for good agricultural production and therefore economic growth (Phiri, 2005).

However, the pivotal role that the agriculture sector plays in ensuring high levels of economic growth is seriously being questioned due to increasing vulnerability of the sector, mainly since the early 1990s. The unpredictable rainfall patterns coupled with declining soil fertility and overall environmental degradation have colluded resulting in declining agricultural productivity. Firstly, Malawi has been hit by persistent drought for several years, which has significantly reduced food security both at household and national level resulting in high levels of malnutrition. This situation has been worsened by the over-dependence of the crop production systems on rain-fed agriculture. Due to declining productivity of the agriculture sector, most particularly within the smallholder sub-sector, every year a large proportion of the rural people have relied on food handouts from the Government and NGOs to fill the gap. Hence this has affected the dynamics of the food markets in the country, particularly white maize.

In addition to the negative effects of drought or floods, declining soil fertility has been recognized as one of the major factors affecting agriculture productivity among smallholder farmers in Malawi. This is compounded by the fact that the majority of them are unable to manage the decline in soil fertility. There has been limited access by the majority of smallholder farmers to improved technologies that could lead to improved food production. Such valuable technologies as inorganic fertilizers, improved seeds and appropriate irrigation technologies among others have not been readily available to the farmers. These improved technologies are costly and thus out of reach of the majority of smallholder farmers who are in most cases cash constrained.

The main objective of this paper was to assess the dynamics of the maize trade in Malawi including highlighting its regulatory framework.

Data Sources and Selection of Markets

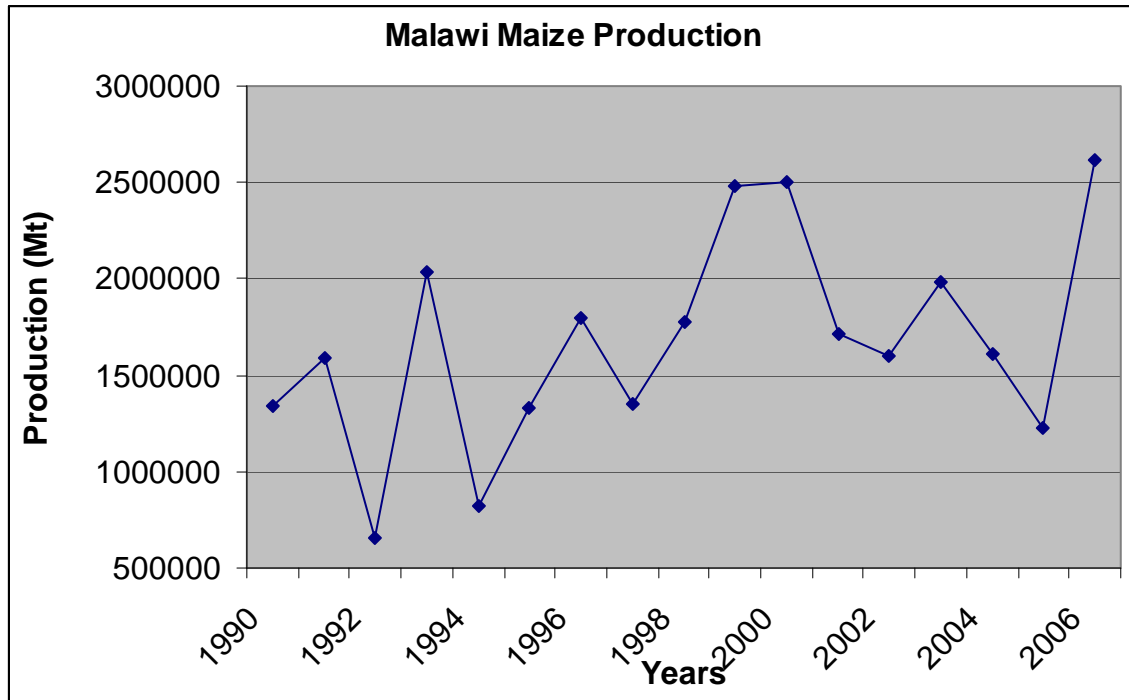
There are two major sources of official reliable time series agricultural commodities price data in Malawi. These are the Ministry of Agriculture and Food Security and The Famine Early warning Systems (FEWSNET). It should be noted that these two institutions share information regularly. The Ministry of agriculture started collecting price data in the late 1980s in few markets. The number of markets has been increasing overtime but due to lack of funds the data is usually inconsistent with many missing values. The Ministry collects only retail prices hence wholesale prices are not available at any source.

In analyzing spatial maize markets integration in Malawi, Sopo (2008), experienced data inconsistencies and inadequacies for major city markets like Lilongwe, Blantyre and Zomba. However, he used Lunzu and Mitundu markets which had consistent data and are close to Blantyre and Lilongwe, respectively. It was hypothesized under spatial market integration theory that prices of a commodity in markets that are close to each other do not divert much from each other and that they tend to move in the same direction almost instantaneously. Again, since these markets lie in the outskirts of the two cities, they are the major agricultural produce markets where city residents purchase the bulk of their maize.

Maize Production in Malawi

Maize is the main food crop and occupies 70% of the cultivated land while cassava is a staple food for about 30% of the population especially along the lakeshore areas of Nkhatabay, Nkhatakota, Karonga and Rumphu, (SARRNET, 2003). NSO (2006) reported that maize is grown by 97% of the smallholder farming households. Not surprisingly, the word food is synonymous to maize in Malawi. Table 1 shows the maize production trend in Malawi since 1990.

Table 1:



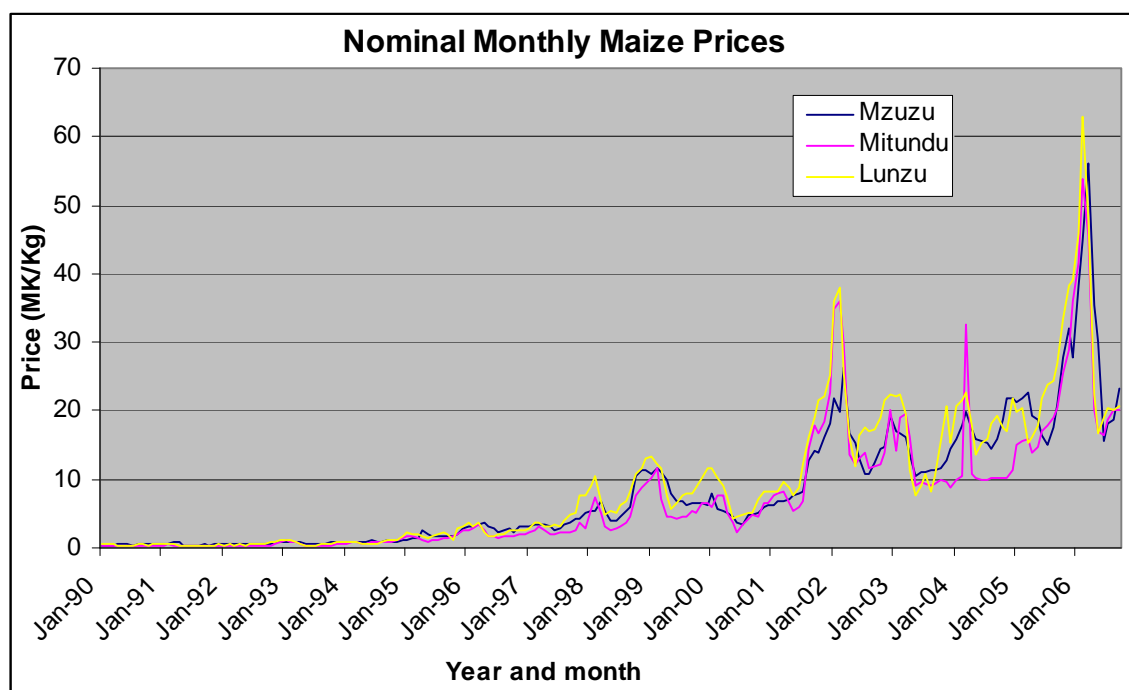
From the 90s Malawi shifted from a net export to net importer of maize. Maize production of smallholder agriculture in Malawi has stagnated or decreased over the years leading to food deficits at national level until recently where we have seen an unprecedented increase in maize production due to the fertilizer subsidy. Arguably, many factors including erratic rainfall, droughts, limited credit, skyrocketing prices of inorganic fertilizer and many more as reported by Ng'ong'ola *et. al.* (1997) contributed to these fluctuations. However in the 1998-99 growing season a national staple food surplus of an estimated 500,000 metric tones was realized. This

surplus could be attributed to the combined effect of the Starter Pack Program and the Agricultural Productivity Investment Program (APIP) coupled with favorable rainfall conditions and expansion of cultivated land as argued by Nakhumwa, (2004). Recently we have also realized surplus maize due to the reintroduction of fertilizer and seed subsidy coupled with good rainfall pattern.

Prices

Table 2 presents nominal retail prices of grain maize from three markets from the three administrative regions in Malawi. These markets are Lunzu from the south, Mitundu from the central region and Mzuzu from the Northern region.

Table 2:



Like many agricultural product, grain maize prices fluctuate within the year. A visual inspection of Graph 2 shows that over the years maize prices have been increasing and largely volatile. Between 1990 and 1997, maize prices were still low and showing some stability. Prices started to increase in 1998 with an unprecedented jump in 2001-2002. This was due to drought experienced in 1999 and then the serious maize shortages that the country experienced between 2001 and 2003. Within the year, maize prices start increasing in July reaching the peak between December and March when most stocks are depleted.

Government Interventions and Regulation of the Maize Market

The government of Malawi intervenes on agricultural markets particularly in maize marketing through operations of the Agricultural Development and Marketing Corporation (ADMARC). The government established ADMARC in 1971 with the objective of improving maize

marketing in the country. For the first 25 years of its operations, it intervened at fixed prices, set by government and consequently the private sector was discouraged. These prices were pan territorial and to a large extent pan seasonal. To undertake this role ADMARC, at its peak, had over 1000 locations from which it operated across the country. However, under the structural adjustment programme in 1987 ADMARC lost its monopoly, and the private sector was no longer discouraged, but ADMARC continued to buy and sell maize at prices set by government until 1995 when it was required to buy and sell within a price band.

ADMARC's trading activities were supplemented in 1981 by the building of the silos at Kanengo in Lilongwe and the creation of a 180,000 MT Strategic Grain Reserve (SGR) to be held in them. This was established to cover over 3 months' full consumption requirements, at a time when Malawi's import routes through Mozambique and South Africa were very insecure.

The Establishment of the NFRA

The National Food Reserve Agency (NFRA) was established in 1999 as a Trust Fund under a Trust Deed with the objectives to (i) maintain the Strategic Grain Reserve. In July 2000, the amendment of the Trust Deed incorporated the objective (ii) to stabilize the grain market price, (iii) to insure the grain importation and exportation on behalf of the government. The Trust Deed stipulates the functions of the Trust as follows:

- Within the financial reserve available to the Trust, to purchase, store and release grain as determined by the Trustees and in accordance with specified procedures;
- To manage the resources, financial and physical, entrusted to, and/or acquired by the trust;
- To the extent possible, to contribute to private sector development in the grain market;
- To advise government on matters relating to national food security and the grain market;
- Responsible for all government imports and/or exports of grain in accordance with specified procedures;
- To make stocks accessible at short notice for emergency relief and social safety net purposes when genuine need arises, on commercial terms and;
- To manage, on behalf of government, any stocks of grain owned by the government for a commercially acceptable fee.

The key role of the SGR was and still is to cope with the food emergency until alternative supplies are identified. Due to the high cost of procuring the maize and stocking it in the SGR, a 60,000 MT threshold is kept each year. The building of these stocks is done through local tenders on the local market. But in case of maize imports, the tenders are extended to international bidders as well. Whether normal or deficit year, 20-30 MT of maize are drawn down immediately after harvest through a mutual agreement between the government and the donor community. The level of maize that is taken out is based on Malawi Vulnerability Assessment Committee (MVAC) reports on the food situation in the country and identification of the communities requiring assistance even in a good year. It is reported that reasons for drawing down on the SGR should be thoroughly given, also indicating the communities that will benefit from the maize including the organizations that will be involved in the distribution. This avoids duplication of effort mainly in times of serious food shortages in the country.

DOMESTIC FOOD BALANCES

| Consumption Year | Total Food Req. (mt) | Production (mt) | Domestic Availability (mt) | Gross Food Gap (mt) | Formal Maize Imports | | |
|------------------|----------------------|-----------------|----------------------------|---------------------|----------------------|-----------------|---------|
| | | | | | Food Aid (mt) | Commercial (mt) | Total |
| 1990/91 | | 1,342,809 | | | | | |
| 1991/92 | | 1,589,377 | | | | | |
| 1992/93 | | 657,000 | | | | | |
| 1993/94 | | 2,033,967 | | | | | |
| 1994/95 | | 818,999 | | | | | |
| 1995/96 | | 1,327,865 | | | | | |
| 1996/97 | | 1,793,461 | | | | | |
| 1997/98 | | 1,351,842 | | | | | |
| 1998/99 | | 1,772,392 | | | | | |
| 1999/00 | 2,023,625 | 2,479,406 | 2,122,495 | 98,870 | | - | - |
| 2000/01 | 1,643,274 | 2,501,311 | 2,432,334 | 789,060 | | - | - |
| 2001/02 | 1,690,333 | 1,713,064 | 1,495,104 | (195,229) | 16,500 | 150,000 | 166,500 |
| 2002/03 | 2,035,643 | 1,603,271 | 1,351,549 | (684,094) | 182,232 | 235,000 | 417,232 |
| 2003/04 | 2,016,052 | 1,983,440 | 1,966,024 | (50,028) | 26,238 | - | 26,238 |
| 2004/05 | 2,039,291 | 1,608,349 | 1,479,132 | (537,032) | 55,167 | 43,000 | 98,167 |
| 2005/06 | 2,114,371 | 1,225,234 | 1,175,564 | (938,807) | 62,000 | 28,000 | 90,000 |
| 2006/07 | 2,255,049 | 2,611,486 | 3,444,655 | 1,189,606 | | - | - |

Notes: These figures do not include informal imports data.

Source: Ministry of Agriculture, Planning Department

Until recently, data on the food balance sheet for Malawi did not include informal imports. Famine Early Warning System Network (FEWSNET) started collecting routinely data on informal cross border trade in July, 2004. When data collection started, not all seventeen Malawi borders with her neighbours were covered. Hence FEWSNET only have complete data for a full consumption season starting from 2005/2006. It is only from 2005/2006 the food balance sheet calculations include informal imports of staples which are estimated by FEWSNET to be around 100,000 metric tonnes. Population figures used for the calculation of consumption requirements are estimates based on the 1998 census. Population census figures are updated once every ten years. A fresh Housing and Population Census is due in June this year.

Malawi has produced a food surplus for two consecutive years now against the backdrop of good weather and introduction of an effective input subsidy programme by government. The surplus for the 2006/7 agricultural season is estimated at about 1.2 million MT, the first such level of production since 1999/00, and a remarkable reversal of the usual deficits that had become a permanent feature since the 2002 drought.

The role of informal imports in guaranteeing food security is significant. The experience of informal trade suggests the need to officially permit the private sector to participate fully through the formal trade route in the importation, storage and marketing of staple foods, like maize, in Malawi. Malawi is the main beneficiary of informal cross border trade. It is a net importer. Most

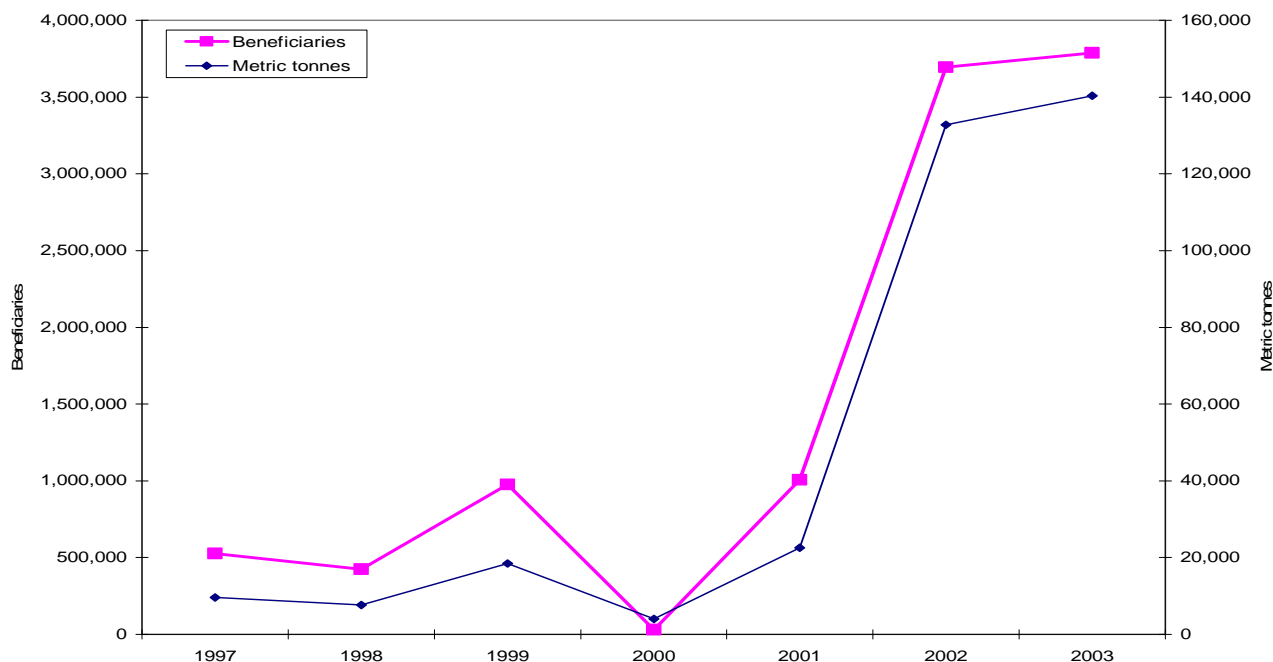
of the maize imports through the informal channels are from Tanzania, then Mozambique and finally, Zambia.

Monthly informal maize imports follow a seasonal pattern reaching a peak around August and then declining to lowest volumes in October and February. Volumes marginally increase in December as households harvest early maize or from irrigation schemes.

FOOD AID

Data on quantity of food aid distributed in Malawi is scanty and not complete. However available data shows that, in general, the flow of humanitarian assistance to Malawi has been increasing since 1997. Both the number of beneficiaries and the tonnage of assistance distributed through programmes directly implemented by WFP in Malawi have risen sharply.

Figure: Total Number of WFP Programme Beneficiaries and Tonnage Distributed



Figures presented here are quoted from WFP Interfais database. It should be noted that the database does not capture all food aid distributed in Malawi as some NGOs procure own supplies and work independently when channelling their assistance directly to communities. WFP captures quantities distributed through pipelines that it coordinates in Malawi. The Department of Disaster Management Affairs is in the process of establishing a database on all humanitarian assistance delivery systems in Malawi to capture this data on a routine and complete basis. With some institutional support from WFP, the Department has now set up a safety nets database which will be regularly updated with statistics on cash for public works, cash distributed under direct welfare programmes, and data on the food for work programmes. The Department is also planning to set up a similar database for food aid.

Maize Imports

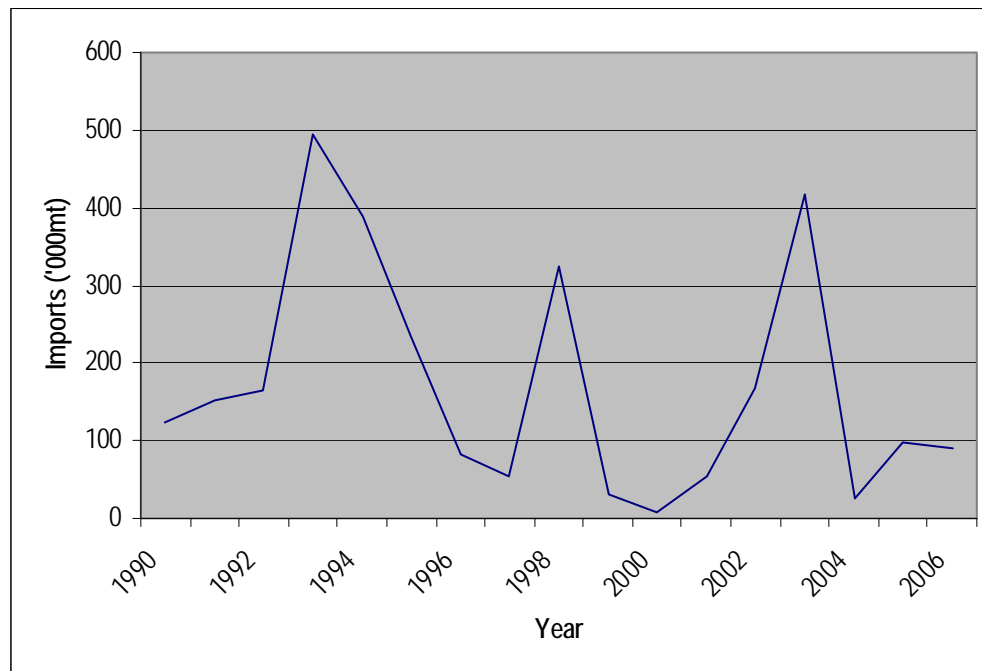
The table below gives annual estimates of maize imports and food aid since 1990. It is noted that food aid and maize imports fluctuate very closely with maize production trends in the country. In the last two decades, the most serious food shortages have been experienced in 1992 and 2001 to 2003. The figures as shown in the table and the graph below directly show the significance of food aid and maize imports in ensuring food security in Malawi.

Maize Imports (commercial and aid)

| Year | Maize imports '000tonnes |
|-------------|---------------------------------|
| 1990 | 123 |
| 1991 | 152 |
| 1992 | 164 |
| 1993 | 495 |
| 1994 | 390 |
| 1995 | 235 |
| 1996 | 83 |
| 1997 | 55 |
| 1998 | 325 |
| 1999 | 31 |
| 2000 | 9 |
| 2001 | 54 |
| 2002 | 167 |
| 2003 | 417 |
| 2004 | 26 |
| 2005 | 98 |
| 2006 | 90 |

Source: Charman, 2006 and MoAFS, 2007

Figure: Maize Imports (Commercial and aid)



The Role of ADMARC in a Liberalized Economy

Despite the fact that ADMARC's no longer has a monopoly in the purchase and sale of agricultural produce including maize, the government still plays its social role by using this parastatal in order to control maize price fluctuation. The social role is reflected in the pan-territorial pricing system for smallholder farmers, particularly maize, and the establishment of markets in non-profitable areas. ADMARC still buys maize from farmers at harvest and sells it to the masses when they deplete their stocks. The continued participation of ADMARC in the market means that prices charged by private traders revolve around the subsidized ADMARC price. Again, although market liberalization entailed allowing for market forces to determine prices, between early 90s and December, 2000, government pursued a maize price band policy which meant that prices would only oscillate within the preset band with the aim of protecting the producers (the floor price) and protecting the consumers (ceiling price). Although the price band was removed, government still intervenes on the market through guiding prices, or floor prices set through ADMARC. All these measures are put in place because grain maize is life for Malawians where up to 67 percent of daily calorific intake comes from maize and lack of control of its prices has also political repercussions to the government. Heisey and Smale (1995) identified Malawi as the highest consumer of maize in terms of proportion of calorie intake from maize than any other country in the world. Between 1988-92, on average 67 percent of total calorific intake in Malawi came from maize. Within the region maize consumption seems to be highest in the three countries of Malawi, Zambia and Zimbabwe. Zambia is second to Malawi with 65 percent, Zimbabwe with 41 percent but the reliance on maize is far much lower in Tanzania with 33 percent. Given the role of maize in the food basket in the region, food security is largely defined with reference to this crop- "Maize is life!"

Maize Movement within and Outside Malawi

Within Malawi, the Southern Region is a perpetual deficit area hence continuously depends on supplies mainly from the Central region. And rarely the northern region as reported by Ng'ong'ola et al (1997). Smallholder agricultural production in the Southern Region is scanty because of land shortage which arises from the high population densities compared to the other two regions. The Lower Shire in the Southern Region is a major deficit area often alternating between floods and droughts. The Central Region is a major maize producing area often producing surpluses that are sold in the Southern region and Northern Region.

Whiteside (1998) and Minde and Nakhumwa (1998) reported that the Southern Region of Malawi also benefits a lot from informal cross border trade with northern Mozambique. However both authors reckoned that it was difficult to quantify the amount of maize that is imported into Malawi. Minde and Nakhumwa (1998) also reported that there is a substantial informal cross-border import of maize through the central and Northern regions of Malawi.

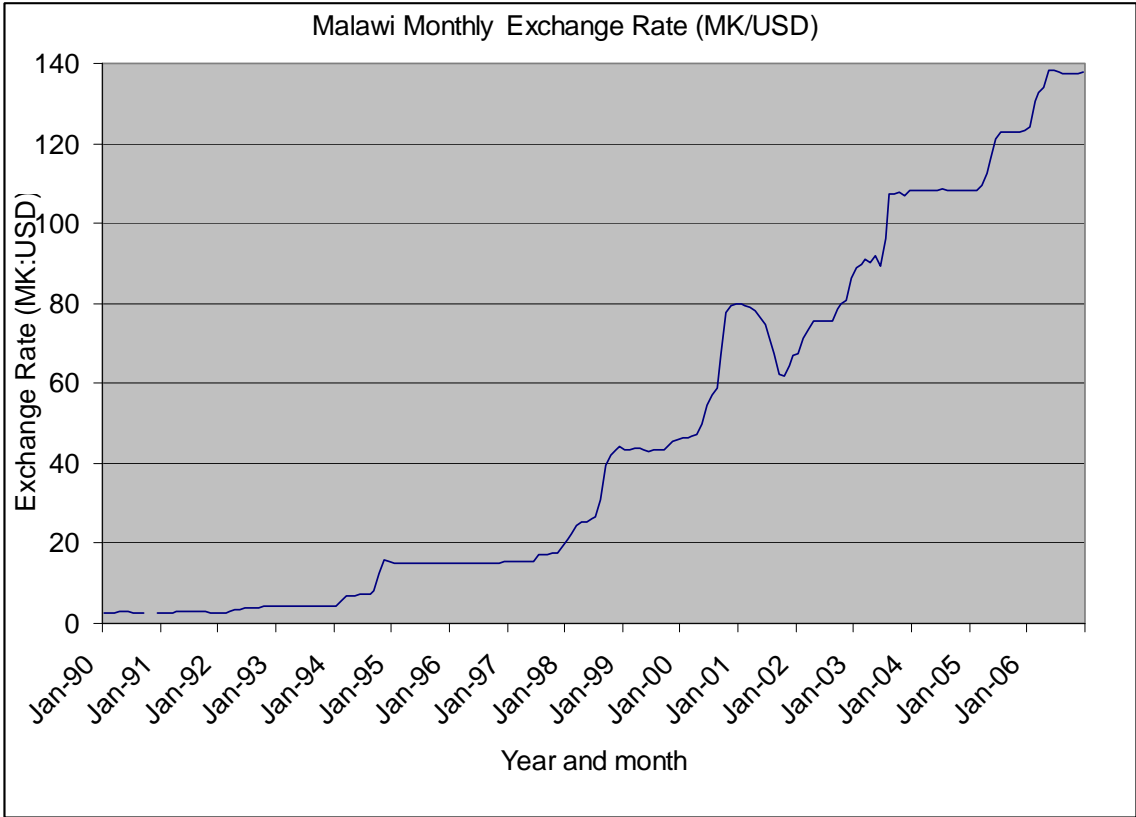
EXCHANGE RATE

Since independence, Malawi has adopted various policies to ensure, among other things price stability, a sustainable external position and faster economic growth and development. To achieve this, Malawi has used various policy instruments, which have included exchange rate and interest rate adjustments. The choice of an exchange rate policy in any country has an important role to play in creating the proper environment for economic growth. The exchange rate policy chosen affects the country's relative price structure between tradable and non-tradable goods and ultimately the overall level of domestic prices. Thus, a particular exchange rate system chosen does have far-reaching effects on the entire economy.

The management of the exchange rate in Malawi can be traced from the year the country got its independence. At that time, the country's currency was fixed at par to the British pound sterling. From that period onwards, the determination of the country's exchange rate has evolved over time, having been pegged to the weighted average of the pound sterling and the US dollar; to the IMF's Special Drawing Rights (SDR); to the weighted basket of seven currencies; and, recently the currency has been allowed to move according to the forces of demand and supply.

As part of the Structural Adjustment Programs (SAPs) which focused on market reforms, Malawi not only liberalised the commodity markets but also gradually moved from managed float to free floating exchange rate (demand and supply regulated exchange rate regime). Table 3 presents how the exchange rate has been moving since 1990.

In the early 90s the Malawi Kwacha was strong against its major trading partners namely the United States Dollar, the British pound and the South African Rand. However after the advent of democracy in 1994, the Kwacha became increasingly weaker against each of those currencies. Between 1998 till recently the Malawi Kwacha became too volatile losing value to the US dollar.



REFERENCES

Charman A.J.E. (2006). Agricultural development and food security in sub-Saharan Africa (SSA): Building a case for more support: The case of Malawi. Working paper no. 04. FAO, Rome.

Heisey P.W. and M. Smale. (1995). Maize Technology in Malawi. A Green Revolution in the making? CIMMYT Report No. 4. Mexico, D.F: CIMMYT.

Minde, I.J. and Nakhumwa, T.O. (1998). Unrecorded Trade between Malawi and Neighbouring Countries. Technical Paper No. 90. Office of Sustainable Development, Bureau for Africa, USAID.

Ministry of Agriculture and Food Security, (2007). 2006/07 Annual Agricultural statistical Bulletin. The planning Department, Lilongwe.

Nakhumwa, T.O. (2004). Dynamic Costs of Soil Degradation and Determinants of Adoption of Soil Conservation Technologies by Smallholder Farmers in Malawi. PhD. Dissertation, University of Pretoria.

Ng'ong'ola, D.H., Kachule, R.N., and Kabambe, P.H. (1997). *The Maize Market in Malawi*. Lilongwe: APRU.

Phiri M.A.R. (2005): Regional Relative Vulnerability Analysis For Malawi: Poverty, Agriculture And Nutrition Security. Paper Submitted to the Institute of Development Studies, University of Sussex, United Kingdom.

Sopo O. (2008). Spatial analysis of maize markets integration in Malawi. Unpublished MSc Thesis. Bunda College, Lilongwe.

Whiteside, M. (1998). When the Whole is more than the Sum of the Parts - the Effect of Cross-border Interactions on Livelihood Security in Southern Malawi and Northern Mozambique. A Report for OXFAM GB, UK. [On-line] Available <http://www.eldis.org>

Annex 6.

Katanga and Kasai Province, Democratic Republic of Congo Maize Trade Profile

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Acknowledgements: Funding for this research was provided by Michigan State University under World Bank Project No. No. 7144132, *Strengthening Food Security in Sub-Saharan Africa through Trade Liberalization and Regional Integration.*

ABBREVIATIONS

- DRC : Democratic Republic of Congo
- COMESA : Common Market for Easter and Southern African Countries.

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1. INTRODUCTION

This research study has been undertaken to give a, comprehensive description and evolution of policies affecting cross boarder trade in maize grain and maize meal into the Democratic Republic of Congo, mainly Katanga Province.

The study also looks at maize production patterns in the Katanga province, prices and distributions. It also looks at the maize wholesale in two markets, that is Lubumbashi and MBUJI MAYI of Kasai East province

2. DRC CONTRY PROFILE



GENERAL INFORMATION

The DRC is a vast country of 2 345 410 Km² with a population of 60 million in habitants. The DRC is between Central and Eastern Africa. It is the third largest country in Africa. The Country has huge reserves of natural resources e.g. tropical forest, abundant water and many minerals.

After attaining independence from Belgium in 1960, the country has not developed any major production sectors in agriculture due to its complexity, geographical vastness, and diverse socio – economic and political influences.

The Country's post independence area has seen a lot of political instability civil strife and a devastating dictatorial rule that reduced the country's production base to zero in almost all sectors.

After 47 years of independence, the country has at last had a free and fair election held, with a popularly elected president place. It is hoped that, a form of development shall now begin to take place in this country.

2.1. KATANGA PROVINCE OF THE DRC

The Katanga province boarder Zambia from Lake Tanganyika to the tip of Zambia's North Western Province bordering Angola. Katanga Province is a big province of 496 877 km² with an estimated population of 8 million in habitants. The province has a lot of mineral resources like Copper, Uranium, Cobalt, Zinc, Manganese, Gold and many others. If it is the main mining province of the DRC, with mining activities in towns like, Lubumbashi, the provincial capital, Kipushi, Likasi and Kolwezi.

Agriculture is mainly of peasant and very few commercial farms. Lubumbashi is also the commercial capital of the DRC and acts as a major distributor of food and other products that are imported in, maize and maize meal being one of the major import items.

2.2.TWO MARKETS FOR THE STUDY : LUBUMBASHI AND MBUJI MAYI

Lubumbashi is the provincial capital of Katanga province, as well as the commercial capital of the DRC. The main entry port for goods for the Southern African Region. The city has rail, road and air link connections to the outside world.

The city is the entry port for maize and other grain imports from Zambia and other countries. From Lubumbashi, distribution is made into the two Kasai Provinces. Maize is mainly sent into Kasai provinces by rail and a bit by road into the Northern towns of Katanga.

Lubumbashi acts as the major whole sale market for imported maize grain and later distributed into others provinces. MBUJI MAYI is the Provincial capital for Kasai East province as well the main Diamond mining town of the DRC. It is linked to other provinces by Air, Road and mainly by rail through the rail head town of Mwene Ditu. Mwene Ditu is 913 km of rail distance from Lubumbashi, and then 135 km of good all weather Road connects MWENE DITU to MBUJI MAYI. The general movement of grain is, by road from Zambia and other countries, then later by rail into MBUYI MAJI, through MWENE DITU. MBUJI MAYI acts as market two since from here maize grain is later sold to other places.

**MAIZE GRAIN
PRODUCTION FOR KATANGA PROVINCE
FROM: 1990 TO / 2006**

| N° | SEASON | PRODUCTION In TONS |
|----|-------------|-----------------------|
| 1 | 1989 – 1990 | 260 000 |
| 2 | 1990 – 1991 | 253 597 |
| 3 | 1992 – 1992 | 271 617 |
| 4 | 1992 - 1993 | 291 456 |
| 5 | 1993 - 1994 | 305 444 |
| 6 | 1994 - 1995 | * |
| 7 | 1995 – 1996 | * |
| 8 | 1996 – 1997 | * |
| 9 | 1997 – 1998 | * |
| 10 | 1998 – 1999 | * |
| 11 | 1999 – 2000 | 240 646 |
| 12 | 2000 – 2001 | 213 294 |
| 13 | 2001 – 2002 | 214 000 |
| 14 | 2002 – 2003 | 333 730 |
| 15 | 2003 – 2004 | 448 286 |
| 16 | 2004 - 2005 | 331 995 |
| 17 | 2005 - 2006 | 500 834 |

* No production figures due to civil wars that led to the ousting of late president Mobutu. The Country, as well as big part of Katanga province was divided into occupied rebel territory and government Controlled areas. Agro activity was almost nil due to civil disturbances in the country side

Source: Ministry of Agriculture Katanga province, provincial inspection of Agriculture
 • Provincial Division of Economy

3.1. MAIZE GRAIN IMPORT

FIGURES FROM 1990 TO 2006

Source : OCC – OFFICE CONGOLAIS DE CONTROLE
CONGOLESE OFFICE OF INSPECTION

| N° | YEAR | QUANTITY IN « 000 » TONS |
|-----------|-------------|---------------------------------|
| 1 | 1990 | * |
| 2 | 1991 | 7266.9 |
| 3 | 1992 | * |
| 4 | 1993 | * |
| 5 | 1994 | * |
| 6 | 1995 | 3 909.2 |
| 7 | 1996 | * |
| 8 | 1997 | 10624.602 |
| 9 | 1998 | 11682.160 |
| 10 | 1999 | 9567.044 |
| 11 | 2000 | 13797.276 |
| 12 | 2001 | 14656.540 |
| 13 | 2002 | 11833.158 |
| 14 | 2003 | 12015.710 |
| 15 | 2004 | 8017.796 |
| 16 | 2005 | 3108.470 |
| 17 | 2006 | 4 709.947 |

- Due to poor statistical and information keeping was not able to find data on these years at government offices.

- All import figures reflect imports from aboard into Lubumbashi
- Rural exports are not reflected in these figures.

4. WHOLE SALE PRICE FOR MAIZE FOR LUBUMBASHI MARKET PER KG

| N° | YEAR | PRICE IN LOCAL CURRENCY | PRICE IN \$ US |
|----|------|-------------------------|----------------|
| 1 | 1990 | # | # |
| 2 | 1991 | # | # |
| 3 | 1992 | # | # |
| 4 | 1993 | # | # |
| 5 | 1994 | # | # |
| 6 | 1995 | 3558 NZ | 0.5\$ |
| 7 | 1996 | 18063 NZ | 0.36\$ |
| 8 | 1997 | 0.70 Fc | * |
| 9 | 1998 | 0.92 Fc | 0.93\$ |
| 10 | 1999 | 3.75 Fc | 0.74\$ |
| 11 | 2000 | 16 Fc | 0.48\$ |
| 12 | 2001 | 98 Fc | 0.40\$ |
| 13 | 2002 | 139 Fc | 0.40\$ |
| 14 | 2003 | 127 Fc | 0.32\$ |
| 15 | 2004 | 120 Fc | 0.30\$ |
| 16 | 2005 | 189.5 Fc | 0.40\$ |
| 17 | 2006 | 144 Fc | 0.27\$ |

* Changing of currency from new Zaire to Franc Congolese

Political disturbances leading to civil strife and looting in the country

**4.1. MONTHLY WHOLE SALE MAIZE PRICES FOR LUBUMBASHI
(1990 to 2006)**

MAIZE WHOLESALE PRICES IN USD PER 1 KG

| Market | Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-------------------|-------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| | 1990 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1991 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1992 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1993 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1994 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1995 | 0.7 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 |
| Lubumbashi | 1996 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.52 | 0.6 |
| | 1997 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1998 | 1.2 | 1.3 | 1.2 | 1.2 | 1.2 | 1.0 | 0.4 | 0.4 | 0.6 | 0.5 | 1.0 | 1.16 |
| | 1999 | 0.9 | 0.9 | 0.8 | 0.7 | 0.7 | 0.5 | 0.4 | 0.3 | 0.3 | 0.7 | 1.2 | 1.3 |
| | 2000 | 0.5 | 0.6 | 0.8 | 0.8 | 0.8 | 0.7 | 0.4 | 0.3 | 0.26 | 0.4 | 0.5 | 0.5 |
| | 2001 | 0.58 | 0.5 | 0.6 | 0.5 | 0.4 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.49 | 0.43 |
| | 2002 | 0.5 | 0.62 | 0.56 | 0.5 | 0.4 | 0.3 | 0.2 | 0.2 | 0.2 | 0.38 | 0.45 | 0.49 |
| | 2003 | 0.4 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.3 | 0.3 | 0.34 |
| | 2004 | 0.4 | 0.4 | 0.4 | 0.3 | 0.3 | 0.3 | 0.2 | 0.2 | 0.2 | 0.3 | 0.3 | 0.3 |
| | 2005 | 0.5 | 0.56 | 0.6 | 0.52 | 0.4 | 0.3 | 0.2 | 0.2 | 0.28 | 0.3 | 0.47 | 0.47 |
| | 2006 | 0.3 | 0.36 | 0.3 | 0.3 | 0.3 | 0.3 | 0.2 | 0.1 | 0.2 | 0.28 | 0.3 | 0.3 |

Political disturbances leading to civil strife and looting in the country

4.2 WHOLE SALE PRICES FOR MAIZE PER KG FOR MBUYI MAJI

| N° | YEAR | IN \$ US | OBSERVATIONS |
|----|------|----------|----------------------|
| 1 | 1990 | | Year of civil strife |
| 2 | 1991 | | " " |
| 3 | 1992 | | " " |
| 4 | 1993 | | " " |
| 5 | 1994 | | " " |
| 6 | 1995 | 0.65 | |
| 7 | 1996 | 0.48 | |
| 8 | 1997 | * | |
| 9 | 1998 | 1.05 | |
| 10 | 1999 | 0.87 | |
| 11 | 2000 | 0.61 | |
| 12 | 2001 | 0.53 | |
| 13 | 2002 | 1.07 | |
| 14 | 2003 | 0.46 | |
| 15 | 2004 | 0.44 | |
| 16 | 2005 | 0.54 | |
| 17 | 2006 | 0.42 | |

* Changing of currency from new zaïre to franc Congolese

4.3. MONTHLY WHOLE SALE MAIZE PRICES FOR MBUJI MAYI (1990 to 2006)

MAIZE WHOLESALE PRICES IN USD PER 1 KG

| Market | Year | Jan | Feb | Mar | Apr | May | Jun | Jul | Aug | Sep | Oct | Nov | Dec |
|-----------------------|-------------|-----|-----|------|------|-----|-----|------|------|------|------|------|------|
| | 1990 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1991 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1992 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1993 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1994 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1995 | 0.9 | 0.9 | 0.88 | 0.7 | 0.7 | 0.6 | 0.4 | 0.4 | 0.4 | 0.4 | 0.74 | 0.78 |
| Mbuji mayi | 1996 | 0.6 | 0.6 | 0.6 | 0.6 | 0.5 | 0.5 | 0.4 | 0.3 | 0.3 | 0.36 | 0.4 | 0.6 |
| | 1997 | # | # | # | # | # | # | # | # | # | # | # | # |
| | 1998 | 1.4 | 1.4 | 1.2 | 1.2 | 1.0 | 0.8 | 0.6 | 0.6 | 0.6 | 1.2 | 1.3 | 1.3 |
| | 1999 | 1.1 | 1.1 | 1.1 | 1.1 | 1.1 | 1.0 | 0.4 | 0.4 | 0.6 | 0.5 | 1.02 | 1.02 |
| | 2000 | 0.8 | 0.8 | 0.78 | 0.78 | 0.7 | 0.5 | 0.4 | 0.24 | 0.42 | 0.4 | 0.72 | 0.78 |
| | 2001 | 0.8 | 0.6 | 0.6 | 0.5 | 0.5 | 0.4 | 0.46 | 0.3 | 0.4 | 0.5 | 0.6 | 0.7 |
| | 2002 | 1.3 | 1.3 | 1.2 | 1.2 | 1.1 | 0.8 | 0.6 | 0.6 | 0.6 | 1.4 | 1.6 | 1.14 |
| | 2003 | 0.5 | 0.5 | 0.46 | 0.5 | 0.5 | 0.5 | 0.4 | 0.3 | 0.4 | 0.46 | 0.5 | 0.5 |
| | 2004 | 0.5 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.32 | 0.3 | 0.4 | 0.46 | 0.5 | 0.5 |
| | 2005 | 0.6 | 0.7 | 0.66 | 0.68 | 0.5 | 0.5 | 0.4 | 0.32 | 0.34 | 0.4 | 0.6 | 0.78 |
| | 2006 | 0.5 | 0.5 | 0.5 | 0.4 | 0.4 | 0.3 | 0.34 | 0.32 | 0.4 | 0.4 | 0.42 | 0.54 |

Political disturbances leading to civil strife and looting in the country

4.4. EXCHANGE RATE FROM 1990 to 2006

| YEAR | 1 \$ US | AVARAGE | LOCAL CURRENCY |
|-------------|----------------|----------------|-----------------------|
| 1990 | 1 USD | 361.6433 | Zaire |
| 1991 | 1 USD | 718.57 | Zaire |
| 1992 | 1 USD | 15587.10 | Zaire |
| 1993 | 1 USD | 645549 | New Zaire |
| 1994 | 1 USD | 1193.95 | New Zaire |
| 1995 | 1 USD | 7040.51 | New Zaire |
| 1996 | 1 USD | 50184.90 | New Zaire |
| 1997 | 1 USD | 131344.76 | New Zaire |
| 1998 | 1 USD | 160666.01 | New Zaire |
| 1999 | 1 USD | 4.02 | Congolese Franc |
| 2000 | 1 USD | 21.82 | Congolese Franc |
| 2001 | 1 USD | 206.82 | Congolese Franc |
| 2002 | 1 USD | 346.48 | Congolese Franc |
| 2003 | 1 USD | 405 | Congolese Franc |
| 2004 | 1 USD | 399.73 | Congolese Franc |
| 2005 | 1 USD | 474 | Congolese Franc |
| 2006 | 1 USD | 520.7020 | Congolese Franc |

4.5. TRANSPORT COST BETWEEN LUBUMBASHI – MWENE DITU MBUJI MAYI

| YEAR | LUBUMBASHI – MWENEDITU \$US/KG RAIL | MWENE DITU TO MBUJI MAYI \$ US/ KG ROAD |
|-------------|--|--|
| 1990 | 0.051 | 0.050 |
| 1991 | 0.057 | 0.053 |
| 1992 | 0.057 | 0.054 |
| 1993 | 0.057 | 0.054 |
| 1994 | 0.060 | 0.054 |
| 1995 | 0.060 | 0.054 |
| 1996 | 0.066 | 0.054 |
| 1997 | 0.066 | 0.054 |
| 1998 | 0.066 | 0.054 |
| 1999 | 0.074 | 0.055 |
| 2000 | 0.074 | 0.055 |
| 2001 | 0.074 | 0.055 |
| 2002 | 0.083 | 0.058 |
| 2003 | 0.083 | 0.055 |
| 2004 | 0.083 | 0.055 |
| 2005 | 0.083 | 0.055 |
| 2006 | 0.092 | 0.055 |

Source: Rail rates from Congolese National Rail Company and for roads, from Kasai Province provincial transport division.

5. MAJOR MAIZE FLOWS

Local maize production is mainly from the districts of Northern Katanga and is broth by rail into the Southern mining towns, while some of it goes to the Kasai provinces also by rail. Roads are very bad and almost impossible in the whole province. The main maize production areas of the province are, Tanganyika district, High Lomami, Lubumbashi, Likasi, Kolwezi, and the territories of Kipushi, Kambove and Sakania.

The import figures reflect imports from abroad. The rural areas supply about only 60% of the production into the urban areas. That is into Lubumbashi 25% and the Kasai 35% the reasons are due to the bad road network from the supply areas into deficit urban areas. Production areas are only reached between the months of May up to October. Maize grain is mostly imported in from November up to May from aboard.

The major export market for maize into the Katanga Province of the DRC, from Zambia are Mkushi, Lusaka, Copper belt and North western Province (Solwezi). From South Africa, Joburg and through Tunduma from Tanzania. It is very important to **NOTE** that almost all imported grain maize is sold in markets and later ground into maize meal by small hammer mills. The big Milling plants are not operational due to inflow of cheaper finished maize meal from Zambia. Much of the maize meals is smuggled in and comes in as unrecorded trade from Zambia. Lubumbashi, imports in almost **64 922.534** tonnes per year of maize meal from Zambia.

But the principal supplier of grain maize into Katanga Province is Zambia. The Maize comes in mainly by truck loads through the Kasumbalesa border of Zambian into Lubumbashi. Some quantity of about 2% of all imported grain maize comes through the Kipushi border from Solwezi on the Zambian side.

5.1. **TABLE ON MAIZE IMPORT COSTS INTO LUBUMBASHI FOR THE 2007 – 2008 SEASON**

| | MUKUSHI | COPPERBELT | LUSAKA |
|----------------|----------------|-------------------|---------------|
| COST PER MT | 200 \$ US | 200 \$ US | 200 \$ US |
| TRANSPORT COST | 70 \$ US | 40\$ US | 70 \$ US |
| HANDLING COST | 4 \$ US | 4 \$ US | 4 \$ US |
| SUB TOTAL CIF | 274 \$ US | 244 \$ US | 274 \$ US |
| 8.5% CIF | 23\$ US | 21 \$ US | 23\$ US |
| LANDED COST | 297 \$ US | 265 \$ US | 297\$ US |

Market maize price in the season, averaged between 285\$ US, to 400\$ US per MT in the whole sale markets at Lubumbashi. This year maize prices from Zambia have moved from 250\$ US per MT to 350 \$ US per MT. This has pushed maize price in Lubumbashi market to over 480\$ to 500\$ US per Mt.

It is to be noted that the supply and demand rule in the maize trade is very active in the DRC. During the deficit months, traders, sell the bulk of their maize, as this is when they take advantage of the shortage and increase prices, while the purchase prices remain the same especially from Zambia where the Government Food Reserve Agency sell maize at a fixed price in the year when they have been authorised. There fore, maize prices in the market are very flexible as they all depend on supply and demand.

5.2. MAJOR POLICIES ON CROSS BORDER GRAIN TRADE

Grain maize and maize products like mealie meal, suffers from periodic Export bans into the DRC mainly from Zambia. For Exporting maize from Zambia one has to get an export permit from the relevant Zambian government ministry. This at times poses a problem and can be an hindrance to export and import of grain maize in the critical months from November to April. Between this time, Zambia first has to assure its national food requirements, before allowing exports. Maize export permit are only issued corresponding to surplus grain. Maize grain Export bans have been affected in a number of years. e.g. 2002/2003 season and of late 2007/2008 seasons.

From the Congolese side maize imports suffer no restrictions of any kind; Since the Katanga Province is constantly a maize deficit area. Importers need to get an import permit from the ministry of Agriculture, Department of Quarantine. It shows the quantity, variety and origin of the product the importers wants to import. Then the exporters should send the maize with a phytosanitary certificate. The bag should be clear and marked with harvest date, expiry date and name of exporter. But these measures are mostly over looked at the borders and maize comes in mostly without the above documents and indications. The Congolese government does not give import credit or participate in maize grain imports. All it does is to wave off the import tariff of 8.5% during the critical months and let the private sector and NGOs bring in the maize grain. The 8.5% import tariff is paid mostly at all times on all maize grains and maize meal imports through out the year. This is what is paid on grain CIF value into the DRC.

AVARAGE URBAN MAIZE GRAIN DEMAND

LUBUMBASHI

The average maize grain urban demand for Lubumbashi is estimated at **5 632 000** metric tonnes of grain maize local supply is only about **72 000** metric tonnes and the rest **5 560 000** metric tonnes has to be imported in per year.

KASAÏ East

As for Kasai East, the average total urban demand is about **4 576 000** metric tonnes from the local sources, only **100 000** metric tonnes is sourced leaving **4 476 000** metric tonnes to be imported in per year.

5.2. CONCLUSION

Due to the general break down of the civil administration system in the DRC it is very difficult to get data and information from government departments. Much of data capture in various government departments has just been put in place. To records exit and computerisation just started in 2000 for most government departments.

But the Katanga and Kasai provinces will continue to be a maize deficit areas, since despite the huge mining investments, there is no investment in commercial Agriculture at all. Currently NGO like FAO, Wold Vision, Pact Congo, Concern, Solidarity, and Premier Urgency are all concentrating only on rural communities, while the city and town grain requirement, has to be imported in. This requirement is growing due to rapid urbanisation.