Maize Market Assessment
And
Baseline Study for Zambia

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Zambia maize sector value chain analysis

TABLE OF CONTENTS

TABLE OF CONTENTS .................................................................................................................................................. I
ACRONYMS AND ABBREVIATIONS ........................................................................................................................................ II
EXECUTIVE SUMMARY .......................................................................................................................................................... 1
INTRODUCTION ...................................................................................................................................................................... 1
KEY FINDINGS .................................................................................................................................................................... 1
RECOMMENDATIONS ............................................................................................................................................................ 3

1.0 INTRODUCTION ............................................................................................................................................................ 6

1.1 BACKGROUND ............................................................................................................................................................. 6
1.2 PURPOSE OF THE STUDY ............................................................................................................................................ 7
1.3 SCOPE OF WORK UNDERTAKEN .................................................................................................................................. 7

2.0 SUPPLY AND DEMAND ANALYSIS ............................................................................................................................ 8

2.1 AGRICULTURAL RESOURCE POTENTIAL .................................................................................................................. 8
2.2 CATEGORIZATION OF MAIZE FARMERS ...................................................................................................................... 9
2.3 PRODUCTION AND SUPPLY CHARACTERISTICS ....................................................................................................... 10
2.4 SENSITIVITY OF MAIZE PRODUCERS TO FACTOR COSTS .................................................................................... 13
2.5 MAIZE PRICE FLUCTUATIONS .................................................................................................................................... 13
2.6 DOMESTIC CONSUMPTION OF MAIZE ........................................................................................................................ 14
2.7 MAIZE IMPORTS ....................................................................................................................................................... 16
2.8 MAIZE EXPORTS ...................................................................................................................................................... 17

3.0 VALUE CHAIN ANALYSIS .............................................................................................................................................. 18

3.1 CHARACTERIZATION OF MAIZE TRADING STRUCTURES – THE PRIVATE SECTOR ................................................. 18
3.2 IMPACT ON SMALL-SCALE FARMERS .......................................................................................................................... 20
3.3 INSTITUTIONAL MAIZE TRADING STRUCTURES ....................................................................................................... 22
3.4 ANALYSIS OF MAIZE TRADE FLOW LEADERS ......................................................................................................... 24
3.5 MAIZE PRODUCTION FORECASTS ................................................................................................................................. 25
3.6 MAIZE PRICING .......................................................................................................................................................... 25

4.0 POLICY AND REGULATORY ENVIRONMENT ............................................................................................................. 28

4.1 POLICIES IN SUPPORT OF MAIZE PRODUCTION .................................................................................................... 28
4.2 MARKET LIBERALISATION ........................................................................................................................................... 30
4.3 MAIZE TRADE POLICIES AND REGULATIONS ........................................................................................................... 33

5.0 SUMMARY OF KEY POLICY ISSUES .......................................................................................................................... 39

5.1 KEY CONSTRAINTS .................................................................................................................................................... 39
5.2 MAIZE WITHOUT BORDERS ..................................................................................................................................... 41
LITERATURE REVIEWED .................................................................................................................................................. 42

Market assessment and baseline study for maize-Zambia
Zambia maize sector value chain analysis

**Acronyms and Abbreviations**

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Full Form</th>
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<tbody>
<tr>
<td>ACE</td>
<td>Agricultural Commodity Exchange</td>
</tr>
<tr>
<td>ACF</td>
<td>Agriculture Consultative Forum</td>
</tr>
<tr>
<td>AGOA</td>
<td>African Growth and Opportunities Act</td>
</tr>
<tr>
<td>ASIP</td>
<td>Agriculture Sector Investment Program</td>
</tr>
<tr>
<td>BOP</td>
<td>Balance of Payments</td>
</tr>
<tr>
<td>BOZ</td>
<td>Bank of Zambia</td>
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<tr>
<td>CBI</td>
<td>Cross-Border Initiative</td>
</tr>
<tr>
<td>CET</td>
<td>Common External Tariff</td>
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<tr>
<td>CIF</td>
<td>Cost, Insurance and Freight</td>
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<tr>
<td>COMESA</td>
<td>Common Market for East and Southern Africa</td>
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<tr>
<td>CSO</td>
<td>Central Statistics Office</td>
</tr>
<tr>
<td>DRC</td>
<td>Democratic Republic of Congo</td>
</tr>
<tr>
<td>EBZ</td>
<td>Export Board of Zambia</td>
</tr>
<tr>
<td>ESA</td>
<td>Eastern and Southern Africa</td>
</tr>
<tr>
<td>EU</td>
<td>European Union</td>
</tr>
<tr>
<td>FDI</td>
<td>Foreign Direct Investment</td>
</tr>
<tr>
<td>FTA</td>
<td>Free Trade Area</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
<tr>
<td>GRZ</td>
<td>Government of the Republic of Zambia</td>
</tr>
<tr>
<td>HIPC</td>
<td>Highly Indebted Poor Countries Initiative</td>
</tr>
<tr>
<td>IMF</td>
<td>International Monetary Fund</td>
</tr>
<tr>
<td>MAC</td>
<td>Ministry of Agriculture and Co-operatives</td>
</tr>
<tr>
<td>MCTI</td>
<td>Ministry of Commerce, Trade and Industry</td>
</tr>
<tr>
<td>MFN</td>
<td>Most Favoured Nation</td>
</tr>
<tr>
<td>MFNP</td>
<td>Ministry of Finance and National Planning</td>
</tr>
<tr>
<td>NGOs</td>
<td>Non-Governmental Organizations</td>
</tr>
<tr>
<td>NTB</td>
<td>Non-tariff Barriers</td>
</tr>
<tr>
<td>NTE</td>
<td>Non-traditional Export (all commodities except copper and other base metals)</td>
</tr>
<tr>
<td>PSI</td>
<td>Pre-Shipment Inspection</td>
</tr>
<tr>
<td>RATES</td>
<td>Regional Agricultural Trade Enhancement Support</td>
</tr>
</tbody>
</table>

Market assessment and baseline study for maize-Zambia
EXECUTIVE SUMMARY

INTRODUCTION

The Regional Agricultural Trade Expansion Support (RATES) project funded by the United States Agency for International Development (USAID) seeks to stimulate policy dialogue in the operation of regional maize markets. Chemonics International is implementing the project in collaboration with the East African Community (EAC) and the Common Market for East and Central Africa (COMESA).

Of particular significance to Zambia is the process of harmonising domestic and regional trade policies that would unblock maize flows from surplus to deficit regions through stable markets and supply conditions that RATES is facilitating. Through such interventions, Zambia can develop strategic options to improve the value and/or volume of maize marketed in Zambia, and also for export to regional markets. Such an environment would clearly stimulate increased local production and remove policy-induced distortions that are discouraging investment in maize trade.

Against this backdrop, RATES commissioned a baseline study and value chain analysis of the maize market in Zambia, the results of which are set out in this report. As is normally the case with such studies, much of the information provides the background against which further and more specific analytical work can be pursued. Thus, the salient features of the report that aim to stimulate policy dialogue are stated below.

KEY FINDINGS

Although Zambia enjoys a comparative advantage in maize production (an important national staple food), she has recently been a net importer, a situation that has posed danger to national food security. This can be attributed to several factors, among them:

i. The continued support for maize production in agro-ecological regions of the country that suffer from frequent droughts, and that are generally unsuited for maize production. Due to this misnomer, more productive regions of the country have suffered as a result of neglect or undersupply of input support.

ii. Macro-economic instability that has resulted in high factor costs thereby inhibiting the competitiveness of the agricultural sector, and in particular, investment in increased maize production.

iii. Policy-induced distortions in the operation of maize markets that have not only resulted in uncertainty, but also served as a source of disincentive to private investment across the maize value chain.

iv. Overlap in operations of the Food Reserve Agency (FRA), and the quest to achieve national food security. The focus of FRA has been in managing seasonal credit to small-scale farmers and purchasing of maize without addressing the actual needs for
Zambia maize sector value chain analysis

maintaining strategic reserves that can be used to balance supplies during deficit periods.

v. Government interference in the maize sector without paying due regard to the liberalized agricultural markets regime.

The effects of the above factors have been more manifest in the problems that Zambia is presently experiencing in reconciling the need to mitigate last season’s production deficit through importation, and operation of domestic markets. The government on its part has maintained the export ban on maize and its by-products. On the contrary, the volume of direct imports being managed by the government and relief supplies have not only created an over supply in the domestic market but, inevitably depressed the value of local production.

The situation is such that:

✓ Millers are presently holding sufficient stocks of maize grain and mealie meal due to the export ban and availability of imported relief maize supplies. This has left early maize farmers without secured markets. For example, in excess of 39,000 metric tonnes of imported maize under the Food Security Programme is presently due to land in the local market while, a further 40,000 metric tonnes has been contractually committed for later in the year. This is against an estimated local production of about 1.1 million metric tonnes in the face of the export ban.

✓ The continuing government led maize importation programme has created uncertainty in the operation of commercial markets due to price distortions. Issues surrounding the setting of floor prices for locally produced maize and the distorted structure of import price subsidies being offered to millers have compounded the situation. For example, the government has been willing to import maize at prices ranging from US $227 to US $290 per metric tonne. On the other hand, such maize is being distributed to participating millers at about US $180 per metric tonne with the difference being covered through budget support (or direct subsidies). In the case of locally produced maize by small-scale farmers in outlying areas, a base price of K30, 000/50 kg bag or US $125/metric tonne1 has been announced for this season. This has also depressed prices of maize being marketed in more accessible urban and other rural production regions with the government offer price being regarded as the ceiling figure.

✓ The operation of support programmes for small-scale farmers has diverted scarce national resources without achieving commensurate results. For example, during the current season, a total of K100 billion (or about US $20.8 million) was allocated to the Food Security Pack programme targeting 120,000 small-scale farmers. Of this total, 20% was expended on covering transport and logistical costs while only 25% of the total outlay has been recovered from the farmers. For the 2003/04 season, the government plans to spend a further K150 billion (or US $31.25 million) towards this programme with major national budget implications given the recovery rates being achieved.

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1 Using exchange rate of US $1.00 = K4, 800

Market assessment and baseline study for maize-Zambia
Zambia may have lost its traditional maize export market in the Democratic Republic of the Congo (DRC). This becomes worse with the reality that new export opportunities are not being exploited due to the ban on exports.

In view of the foregoing, a comprehensive review of policies affecting the competitive production of maize and its flow into both domestic and export markets is highly necessary. A major challenge facing the government is the removal of restrictions affecting both local and export trade in maize, and the implementation of import programmes. More importantly, Zambia has made commitments under COMESA and the World Trade Organisation (WTO) to remove both tariff and non-tariff barriers to trade. The imposition of unilateral export bans may therefore constitute a violation of Zambia’s regional and international commitments related to trade liberalisation. This is not withstanding the current market liberalisation policies that the government has not only espoused but has committed itself to implementing. On top of these are the high social and economic costs associated with the government’s involvement in the maize market through direct imports and the structure of support to small-scale farmers.

RECOMMENDATIONS

One of the main challenges faced by Zambia is that of establishing enabling policies that would guide maize production and marketing under a liberalised environment. First, this would require that considerations of maize being a national staple food be addressed more strategically with a coherent and a “market friendly” framework put in place to secure strategic reserves and stabilize markets. Second, stimulation of maize production under competitive conditions should be the a primary objective of the government in the formulation and implementation of agricultural policies.

Third, investment in maize production, processing and marketing will be encouraged where the operations of markets are seen as predictable and stable. For this to take place however, policy induced distortions such as export bans, costly small-scale farmer support programmes and controlled (or special) government imports are managed more prudently.

Various studies of the agricultural sector and maize marketing in particular have been undertaken in Zambia that have provided a number of important and practical policy proposals. These however, need to be reviewed in the light of changing circumstances.

Some of the review points can be summarised as follows:

Production

- Specific policy initiatives will be required to commercialise small-scale agricultural production that address input supply and marketing;
- Small-scale farmers further require technical support such as marketing centres to promote bulking, provision of technical and extension support and market information services.
Opportunities should be explored for linking small-scale and commercial farmers under out-grower schemes in order to induce synergies of production concentration and filtration of farm management skills.

All farmers require access to affordable credit that be structured under preferential terms with commercial banks and/or the establishment of a dedicated agricultural financing institution.

Other factor costs associated with utility charges, fuel costs and poor infrastructure (access roads and reliable telecommunication networks) need to be addressed in a strategic manner so as to make agricultural production more competitive.

Access to agricultural land has continued to affect expansion and does not presently require security of tenure. A deliberate programme of unlocking arable land needs to be put in place together with required social infrastructural services that can encourage private sector investment.

Marketing

The foremost area of consideration is the implementation of policies that stabilise maize markets and makes them more predictable.

In particular:

- Government interventionist policies must take prior consideration of stakeholder interest within the maize value chain.
- Restrictive practices that are inconsistent with Zambia’s regional and international trade liberalisation commitments need to be reviewed.
- Roles played by statutory bodies need to be clearly defined so that they operate in accordance with their official mandates without distorting the operation of markets.

Maize Policy

Government needs to promote dialogue with stakeholders within the maize value chain to give room for the development of clear policies that will guide its production, marketing and pricing.

In particular:

- The role of government must be clearly stated and understood to avoid inconsistency in market signals that have characterised its conduct.
- Conditions under which restrictions can be imposed on maize trade be stated, and the procedures that would be followed prior to the implementation of any such restrictions need to be formulated and agreed upon by all parties.
A clear statement of policy is required in maize price setting in order to ensure that all stakeholders can plan accordingly.

Presently, anyone can operate as a maize trader a situation that exposes farmers to manipulative practices and side selling. Past and potential investors in out-grower schemes have been discouraged with the unregulated nature of maize trading operations and the weak legal framework for prosecuting credit defaulters. New initiatives, such as licensing of maize traders and promotion of warehouse receipt schemes require specific polices and a legislative framework to support their implementation.
1.0 INTRODUCTION

1.1 Background

Maize conjures high nationalistic sentiments in Zambia. This is mainly due to the fact that it is a staple food and affects food security and incomes of about 80% of the population. According to government, domestic maize consumption is estimated at about 1,200,000 million metric tonnes/year. Zambia National Farmers Union (ZNFU), however, estimates this demand in the region of 900,000 metric tonnes per year. Despite the varying estimates of domestic consumption levels, Zambia has only recorded domestic surplus in two seasons since 1995. The country has therefore been experiencing maize deficits over the years, a phenomena that has heightened restriction on the commodity’s trade.

Given the climatic and geographic diversity in the Eastern and Southern African (ESA) region, free maize trade ought to mitigate such food security concerns, occasioned by maize deficits. Where such free flow is guaranteed, the private sector would inevitably invest in the requisite infrastructure to ensure that it is able to move maize from deficit to surplus regions. Presently, private sector investments and involvement in maize movement is severely limited by ad hoc (maize) trade restraining policies that introduce uncertainties and the accompanying investment risks.

Zambia, like all COMESA countries, has an opportunity to utilize the COMESA trade regime framework to address the rigidities that characterize regional maize trade. Zambia’s commitments to regionalism is manifested in its being part of the nine countries in COMESA that are implementing the Free Trade Area (FTA). This could be used as a platform for safeguarding the country against food insecurity by guaranteeing free flow of maize from the surplus countries to Zambia. On the flip side, Zambia should be able to export maize to her regional neighbours that also face deficits without internally induced restrictions.

The Regional Agricultural Trade Expansion Support (RATES) project funded by the United States Agency for International Development (USAID) seeks to enhance regional maize trade through the EAC and COMESA. Chemonics International is implementing the project, in collaboration with EAC and COMESA. A key theme of the RATES project is the relaxation of non-tariff barriers (NTB) to facilitate increased cross-border trade in maize.

This approach is premised on the recognition that for most East and Southern African (ESA) countries, maize is a staple food with major implications on food security in the region. Under the RATES initiative, a key strategy is to promote the ability of maize to move from surplus to deficit regions of ESA countries more freely. This means focusing on geographical advantage rather than inward oriented markets as well as the relaxation of regulations that constrain free movement of maize across borders.

This study has been commissioned by the RATES to identify opportunities, issues and constraints facing maize trade in Zambia. The objective of the study is to start the process towards timely market information, forging linkages among maize traders in the region and facilitation of policy harmonization within the EAC and COMESA.
Zambia maize sector value chain analysis

1.2 Purpose of the study

The broad purpose of the study was to carry out a maize market assessment and baseline study for Zambia. As part of the study, a maize value chain analysis (VCA) was undertaken to facilitate the development of strategic actions to improve the value and/or the volume of maize marketed in Zambia. Specifically, the study was aimed at accomplishing the following:

- Generating a maize Value Chain Analysis (VCA) for Zambia
- Analyzing the value chain at various market transfer points and assessing the value added by participants in the maize chain.
- Listing all categories of players along the chain by name, location, type of entity and contact information.
- Identifying issues, problems, and constraints at each transfer point in the chain.
- Identifying the flow of maize volumes between sectors, in addition to the uses and consumption of maize and maize by-products.
- Analyzing the value change in the maize chain between transaction points.
- Identifying trade regulations that govern the exports and imports of maize.
- Assessing the impact of trade policies and regulations on cross-country movement and cross-border trade of maize.
- Developing a five-year baseline data for the maize industry in terms of volume, value, price and sales among others.
- Providing insights on issues and problems, as well as suggesting recommendations that may enable the maize industry to improve on the volume and value of maize.

1.3 Scope of Work Undertaken

An attempt was made to address each of the above issues. The conduct of the assessment involved a number of steps that included the following:

- Literature review of policies and other pieces of information related to the maize value chain.
- Holding meetings with key representatives at each point of the maize value chain including; the Ministry of Commerce, Trade and Industry (MCTI), Ministry of Agriculture and Cooperatives (MAC); specialised agencies of Government and, associations of farmers and millers.
- Selective visits to Southern and Eastern provinces, both major production areas for maize. The Copperbelt and Lusaka provinces were also visited as major urban mealie meal consumption regions that are however, presently deficit areas. In addition, the Copperbelt province is a main gateway to the Democratic Republic of Congo (DRC), a key market.

The data gathered study processes has formed the basis of the analytical output set out in this report. It should also be noted that maize is regarded as the most important staple food in Zambia. As such, discussion of open trade in maize conjures both political and nationalistic sentiments that are largely inward looking and protective. Due to this situation, it was not always easy to obtain the full cooperation of all sources of key information required for this study.

Market assessment and baseline study for maize-Zambia
Zambia maize sector value chain analysis

2.0 Supply and Demand Analysis

2.1 Agricultural Resource Potential

Unlike most other Eastern and Southern Africa countries (ESA), Zambia, with a population of about 10 million people and a land area of about 752,000 square kilometres, enjoys relatively abundant resources in land, water and other natural resources required for agriculture. About 58% of Zambia’s total land area and 42 million hectares is classified as medium to high potential for agricultural production, with rainfall varying between 800mm and 1 400 mm annually. Population density is extremely low in most of the productive regions, ranging from 1 to 11-persons/square km. Despite these endowments, it is estimated that only 14% of Zambia’s total agricultural land is currently being utilized.

Maize accounts for between 50-67% of the total land area under cultivation, and is grown around the entire country despite agro-ecological conditions being unsuitable in some areas. Zambia is divided into three main agro-ecological regions that are essentially a preserve of common agricultural activities. The classification is based on climatic conditions (i.e. rainfall and temperature) and soil types, as follows:

Agro-ecological Region I: This zone constitutes about 42% of Zambia’s land area, and covers the watershed areas of the Luangwa and lower Zambezi Rivers bordering Zimbabwe. These are the driest parts of the country with rainfall ranging from 600mm to 800 mm per annum. The growing season is relatively short at between 60 and 90 days. Soils in this region are either derived from alluvial river deposits or from Kalahari sands. The region experiences frequent droughts and is characterized by low water holding capacity by the soils. Tsetse fly infestation is a major limitation to livestock production in some parts of this region. More drought tolerant crops such as sorghum, sunflower, cassava, tobacco, millet, and cotton can be supported in this region. Some 48% of the rural population lives in these areas.

Agro-ecological Region II: This region accounts for about 12% of Zambia’s land area and stretches from the Nyika Plateau bordering Malawi and Tanzania in the northeast to the extreme west of the country. It covers most parts of Central, Eastern, Lusaka, and Southern Provinces. Rainfall ranges between 800mm and 1000 mm per annum and is relatively reliable. The growing season ranges from 90 to 190 days. The soils are brown, clay to loam types and are moderately leached with medium to high acidity. This region has the potential of supporting the greatest range of crops and all classes of livestock. Some 43% of the rural population lives in these areas. This region accounts for the bulk of commercial production of crops and livestock products. An estimated 53% of the cash incomes of smallholder farmers in 1998/99 was obtained in this region-largely from maize production.

Agro-ecological Region III: This area accounts for about 46% of Zambia’s land area covering the Northern, Luapula, Copperbelt, and North-western Provinces bordering Angola and

2 Based on the preliminary results of the 2000 National census.

Market assessment and baseline study for maize-Zambia
Zambia maize sector value chain analysis
Katanga province of the DRC. It also has the wettest parts of the country (the High Rainfall Zone), with rainfall generally above 1200 mm per annum. The growing season ranges from 140 to 200 days.

The soils are low in fertility and exhibit extreme acidity. However, with the use of lime it is possible to grow less acid tolerant crops in this area. Crops such as maize, bananas, coffee, tea, and rubber grow reasonably well in these areas. Only 9% of the rural population lives in these areas, although some 29% of smallholder farm cash incomes in 1998/99 was obtained from this region.

Generally, the main variety grown in these areas is the white maize. Maize production patterns however, differ in each of the above agro-ecological regions. The typical calendar for each agro-ecological zone or region is shown below in Table 1.

<table>
<thead>
<tr>
<th>Region</th>
<th>Average Rainfall (mm/year)</th>
<th>Provincial Location</th>
<th>Growing Season (Days)</th>
<th>Maize Planting Period</th>
<th>Maize Harvesting Period</th>
<th>Maize Variety Planted</th>
</tr>
</thead>
<tbody>
<tr>
<td>I</td>
<td>Less than 800 mm</td>
<td>Southern and Southern Parts of Western Province</td>
<td>80 - 129</td>
<td>November - December</td>
<td>March to June</td>
<td>Early maturing (90 –120 days)</td>
</tr>
<tr>
<td>II</td>
<td>800 – 1,000</td>
<td>Eastern, Lusaka, Central and Western Provinces</td>
<td>100 - 140</td>
<td>November to Early December</td>
<td>April to June</td>
<td>Medium to Late Maturing (120-130 days)</td>
</tr>
<tr>
<td>III</td>
<td>More than 1,000</td>
<td>Northern, Luapula, Copperbelt and North-Western Provinces</td>
<td>140 - 200</td>
<td>October to Early December</td>
<td>May to July</td>
<td>Late Maturing to Medium (130 –150 days)</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture & Cooperatives

2.2 Categorization of Maize Farmers
Maize is grown by farmers of different sizes for commercial, semi-commercial and household consumption purposes in various regions of the country. Its production can also be categorized into three management types depending on a combination of factors which may include; the size of the area farmed, use of mechanisation, type of labour, inputs used and whether production is mainly for household consumption or the market. (See table below)

<table>
<thead>
<tr>
<th>Farmer Category</th>
<th>Farm Size (Hectares)</th>
<th>Yield MT /Hectare</th>
<th>Other Characteristics</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commercial</td>
<td>40 or More</td>
<td>4-8</td>
<td>Mechanized, hire labour and produce for the market</td>
<td>Southern, Central &amp; Lusaka provinces</td>
</tr>
<tr>
<td>Emergent</td>
<td>5-40</td>
<td>2-4</td>
<td>Use animal draft power, purchased inputs, family &amp; hired labour, produce for the market</td>
<td>Located near domestic markets and input suppliers</td>
</tr>
<tr>
<td>Small Scale</td>
<td>Less than 5</td>
<td>Less than 2</td>
<td>Use hand tools, family labour, produce for own consumption and sell surplus</td>
<td>Form bulk of the rural population</td>
</tr>
</tbody>
</table>

Market assessment and baseline study for maize-Zambia
Zambia maize sector value chain analysis

Small-scale farmers who number about 800,000 also account for about 65% of total maize production in the country. Small-scale farmers mainly produce at the subsistence level, using family labour and hand-hoe systems of cultivation. They also normally grow one or two other cash crops on a limited basis to raise income for household expenses. These farmers mostly depend on external support for inputs and other services, including seasonal credit. Among the band of small-scale farmers, only a minority regularly market their crops.

According to the Post-Harvest Survey, only 40% of small-scale farmers sold crops during the 1999/2000 season. The proportion is lower than 30% in some of the more remote and drier areas (i.e. Western Province)\(^3\). Farm income is also skewed within smallholder agriculture. Zulu et al. (2000) estimate that only 20% of smallholders (about 200,000 households) account for 60% of the crop value derived from this sub-sector.

Emergent (or medium scale farmers) farmers, numbering about 60,000 account for about 15% of the total maize produced in the country. Emergent farmers share many characteristics with smallholder growers, but have advanced to a more defined form of commercial orientation and generally farm much larger areas, using ox-drawn equipment. These growers sometimes hire tractors, wherever possible for cultivation. Despite having a more commercial orientation, they are still constrained by the lack of access to agricultural inputs and secure market outlets and so, give priority production for home consumption.

The balance of the national maize production (about 20%) is grown by commercial farmers- including large corporate firms, which number about 750. Though relatively few in number, they account for a substantial share of marketed agricultural production in Zambia. These include, nearly all marketed production of wheat, soybean, coffee, and Virginia tobacco, and a major share of sugarcane, poultry and milk production. Until the early 1990s, commercial farmers accounted for about 30% of total marketed surplus maize.

2.3 Production and Supply Characteristics

Characteristically, maize production tends to fluctuate during each season, mainly due to rainfall patterns and more recently, in response to Government policy interventions. Table 2 below, provides data on maize production trends over the last ten years from 1992.

<table>
<thead>
<tr>
<th>Year</th>
<th>Area under cultivation (Hectares)</th>
<th>Production (MT)</th>
<th>Marketed Production (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1992/3</td>
<td>623,340</td>
<td>633,326</td>
<td>929,93</td>
</tr>
<tr>
<td>1993/4</td>
<td>679,914</td>
<td>679,356</td>
<td>476,288</td>
</tr>
<tr>
<td>1994/5</td>
<td>520,165</td>
<td>520,165</td>
<td>344,676</td>
</tr>
<tr>
<td>1995/6</td>
<td>675,565</td>
<td>675,565</td>
<td>668,123</td>
</tr>
</tbody>
</table>

\(^3\) Institute of Economic and Social Research (2000). Key Performance Indicators at the District Level.
Zambia maize sector value chain analysis

<table>
<thead>
<tr>
<th>Year</th>
<th>Area under cultivation (Hectares)</th>
<th>Production (MT)</th>
<th>Marketed Production (MT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1996/7</td>
<td>649,069</td>
<td>649,039</td>
<td>314,608</td>
</tr>
<tr>
<td>1997/8</td>
<td>510,374</td>
<td>510,372</td>
<td>182,384</td>
</tr>
<tr>
<td>1998/9</td>
<td>598,181</td>
<td>818,149</td>
<td>250,003</td>
</tr>
<tr>
<td>1999/00</td>
<td>605,648</td>
<td>1,052,806</td>
<td>191,592</td>
</tr>
<tr>
<td>2000/01</td>
<td>583,850</td>
<td>801,877</td>
<td>292,401</td>
</tr>
<tr>
<td>2001/02</td>
<td>575,685</td>
<td>601,606</td>
<td>Not yet available</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture and Cooperatives

As can be noted from Table 2, production has been varying from year to year mainly due to the following reasons:
- Inadequate, excessive or poorly distributed rainfall
- Increasing frequency of drought years, and
- Removal of government subsidies on fertilizer and the effects of de-regulation of maize markets.

It is also notable, however that over the ten-year period, the changes in area under maize crop did not match with officially recorded production and marketing data. Part of this can be attributed to two major factors. First, is the increased use of output for on-farm consumption either as stock or human feed and two, use of unofficial marketing channels due to unfavourable government pricing policies and export bans. It is widely acknowledged that unofficial exports of maize account for a substantial proportion of marketed maize that is not included in national accounts. In addition, commercial farmers tend to hoard maize during seasons when prices are unfavourable.

Keyser (1996) observed that the average normal yields are far less than the potential yields, as land is not a limiting factor. The main issues have been rainfall patterns and inconsistent government policies that have been sending negative market signals. Estimates were made of potential yields for different categories of farmers in different locations where maize production is high as shown below.

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Market assessment and baseline study for maize-Zambia
Farmers are presently under achieving in production yields. This would also suggest that current average yields in high production areas could improve by at least 40% with the use of better cropping systems, more stable markets and prices. Farmers have been encountering increased liquidity problems leading to a reduction in their input purchases and use of yield-enhancing inputs. What is more, their ability to replace equipment and other ageing farm assets has been drastically reduced.

Agricultural borrowing from banks and other financial institutions has also contracted considerably due to high interest rates and the collapse of dedicated rural financial institutions. Input distributors and agro-processing companies have offered inputs on credit to certain farmers, yet the scale and breadth of these initiatives have varied from year to the next, depending on credit repayment performance, market developments, and interventions by government.

The above have been compounded by periodic policy changes by the government with respect to commodity markets and more frequently, with respect to input supply conditions, especially fertiliser for small-scale and emergent farmers. This has also contributed to the volatility of agricultural production. For example, the proportion of farmers using fertiliser dropped sharply in the early 1990s following the removal of fertiliser subsidies as can be noted from Table 4.

Table 4: Percent of Smallholder Farmers Using Fertiliser by Province

<table>
<thead>
<tr>
<th>Province</th>
<th>1990/91</th>
<th>1995/96</th>
<th>1999/00</th>
</tr>
</thead>
<tbody>
<tr>
<td>Central*</td>
<td>51</td>
<td>33</td>
<td>34</td>
</tr>
<tr>
<td>Copperbelt*</td>
<td>23</td>
<td>33</td>
<td>33</td>
</tr>
<tr>
<td>Eastern*</td>
<td>28</td>
<td>18</td>
<td>29</td>
</tr>
<tr>
<td>Luapula</td>
<td>9</td>
<td>13</td>
<td>8</td>
</tr>
<tr>
<td>Lusaka*</td>
<td>53</td>
<td>26</td>
<td>37</td>
</tr>
<tr>
<td>Northern</td>
<td>39</td>
<td>23</td>
<td>17</td>
</tr>
<tr>
<td>North-western</td>
<td>15</td>
<td>13</td>
<td>5</td>
</tr>
<tr>
<td>Southern*</td>
<td>43</td>
<td>27</td>
<td>39</td>
</tr>
<tr>
<td>Western</td>
<td>12</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>National Average</td>
<td>31</td>
<td>20</td>
<td>23</td>
</tr>
</tbody>
</table>

5 The locations by province are as follows: Mazabuka (Southern); Mkushi (Central); Kasama (Northern); and, Chipata (Eastern). *Relatively urbanised provinces

Market assessment and baseline study for maize-Zambia
As Table 4 illustrates, trends in fertiliser use vary between areas with farmers located along the line-of-rail and Eastern Province maintaining higher fertiliser use, while farmers located in more remote and less commercialised areas have cut back sharply in fertiliser use. Since the mid-1990s, fertiliser use seems to have stabilised, as has been the overall level of national fertiliser supply.

2.4 Sensitivity of Maize Producers to Factor Costs

The above basic characterisation has major implications on the sort of factor costs that each is exposed to and how economies of scale impact on returns realised from production activities. For example, small-sale farmers who exclusively rely on manual labour primarily grow maize for domestic consumption, selling some surplus for cash incomes. The factors that they tend to be sensitive to are the timely supplies and cost of maize seed and fertiliser. They are normally reliant on seasonal credit and external agents, particularly state agencies and NGOs to take the direct responsibility of ensuring that inputs are supplied to them for their needs.

Anecdotal evidence also suggests that they tend to have a higher propensity to default when advanced seasonal inputs. They are also more amenable to crop piracy and side selling, accepting barter systems of trade and demonstrating a willingness to swap maize for other material goods. Most important, they have difficulties in successfully negotiating for more favourable maize prices and are thus vulnerable to manipulative crop buying practices.

On the other hand, emergent farmers who use drought power tend to apply, albeit on a rudimentary scale, commercial principles in their systems of farming. They also tend to rely on external agents to supply inputs and provide seasonal loans but generally possess higher levels of entrepreneurial discipline than the former class of small-scale farmers. As such, their concerns and sensitivity exceed issues of timely and cost of basic input supplies. They tend to be concerned with maize prices as they are more exposed to maize buying agents who visit their areas. This is because they are not able to meet the direct marketing costs of delivering maize to millers. In addition, they generally cannot afford to meet the cost of storing maize targeted for marketing. Opportunities to obtain credit through formal financial institutions are also virtually non-existent for both smallholder and emergent farmers, partly because of legal restrictions on the use of land for collateral.

Commercial farmers are generally fully integrated with markets making extensive use of modern technology, irrigation and paid labour. These farms can sometimes be very large and may cultivate more than 200 hectares in total. They also tend to rely on commercial credit and organise inputs through own initiatives and direct sourcing. Their sensitivity tends to be with all factor costs such as, fuel electricity energy, interest rates and transport and telecommunication.

2.5 Maize Price Fluctuations

Although the government had expressed an intention to allow market forces of supply and demand to influence pricing of agricultural commodities, this policy has not held in the case of maize (which is widely regarded as a political crop). With the Government putting pressure on the millers to restrain maize meal price increases, this affects what is offered to farmers as...
Zambian farmers are therefore, supplying into a domestic market which is experiencing steadily decreasing power and into an international market where commodity markets are offering sharply reduced prices for a broad range of food, beverage, and industrial crops. The Zambian domestic market has also experienced increased competition from imports (discussed further below).

2.6 Domestic Consumption of Maize

Estimates of domestic demand for maize vary, depending on the source of this information. For example, Government based estimates indicate that domestic consumption stands at about 1,200,000 million metric tonnes/year, while the Zambia National Farmers Union (ZNFU) says it is in the region of 900,000 metric tonnes per year. Despite the varying estimates of domestic consumption levels, Zambia has only recorded a domestic surplus in 2000/01 season since 1995, as can be noted from Table 5 below.

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Zambia maize sector value chain analysis

<table>
<thead>
<tr>
<th>Table 5: Maize Surplus/Deficit Situation (in Metric Tonnes)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production (Units in Metric Tonnes)</td>
</tr>
<tr>
<td>1,410,000</td>
</tr>
<tr>
<td>Consumption (Units in Metric Tonnes)</td>
</tr>
<tr>
<td>1,390,000</td>
</tr>
<tr>
<td>Imports: Commercial</td>
</tr>
<tr>
<td>50,000</td>
</tr>
<tr>
<td>Food Aid</td>
</tr>
<tr>
<td>0</td>
</tr>
<tr>
<td>Surplus/(Deficit) In Metric Tonnes</td>
</tr>
<tr>
<td>-(10,700)</td>
</tr>
</tbody>
</table>

Source: Ministry of Agriculture and Cooperatives

Against these varied estimates of domestic consumption, human consumption accounts for as much as 90% while livestock feed production and brewing account for 8% and 2%, respectively. It is also estimated by the ZNFU that annual industrial demand for maize that mainly consumed millers and brewers, is in the neighbourhood of 600,000 metric tonnes. The balance is said to be for direct home consumption and informal sale on the domestic markets.

These differing perceptions of demand have also played an influential role in the determination of import quantities whenever domestic supply deficits are anticipated. For example, during the 2001/02 marketing season when domestic production was estimated at 800,000 metric tonnes, the ZNFU estimated the deficit that had to be met by imports at 150,000 metric tonnes. The Government on its part assumed the deficit to be 400,000 metric tonnes and proceeded to commit direct import supply contracts of the same magnitude. The ultimate effect of this situation has been to distort domestic supply conditions and market prices for maize.

The government decision to import of about 150,000 metric tonnes of maize was based on the need to contain a looming shortage of maize meal supplies and hunger for the majority of the population. These contracts were committed in the latter part of 2002 and so far, about 47,000 metric tonnes have been received and a further 20,000 metric tonnes being awaited. During the same period, millers also imported about 150,000 metric tonnes from official channels (unofficial channels discussed further below).

Notable features about government imports have been the high supplier prices, ranging from about US$227 to US$290/metric tonne. This maize is then sold to millers at around US$180/metric tonne in order to ensure that they, in turn, keep maize meal prices at a stable level. On the other hand, millers have been able to import at about US$220/metric tonne. The cost of the subsidy offered to millers has been borne directly by the government with major budgetary implications.

Market assessment and baseline study for maize-Zambia
Zambia maize sector value chain analysis
In response to the food deficit appeal made by government, the World Food Programme has also imported maize of about 12,000 metric tonnes. This supply is intended for distribution to the vulnerable groups in outlying areas of the country.

The actual inflow of maize imports has also taken place at a time when the early locally grown crop is also available on the market, thus causing an over-supply and ultimately depressing prices of the locally grown maize as it is not tied to supply contracts. More recently, the ZNFU has been prevailing on the government to re-negotiate supplier contracts for the imported maize so as to reduce order quantities as locally grown maize is forecast at 1,000,000 metric tonnes. This means that the local product is capable of meeting total domestic demand at more affordable but competitive prices for farmers.

2.7 Maize Imports

To meet the gap between domestic demand and supply, importation of maize tends to be accorded priority due to food security considerations whenever there are local production shortfalls.

The main importers of maize are the Government, FRA, millers and a few large commodity traders. These imports normally take place with official government sanction including waivers of import duties. Official imports of maize are normally sourced from Zimbabwe and South Africa. In recent years imports have also come from Tanzania and Mozambique. Table 6 shown below provides a summary of the main sources of maize imports over the last two years. Information relating to earlier years could not be obtained from authoritative sources during the course of this study.

<table>
<thead>
<tr>
<th>Source of Maize</th>
<th>2000</th>
<th>2001</th>
<th>2002</th>
</tr>
</thead>
<tbody>
<tr>
<td>RSA (RSA)*</td>
<td>-</td>
<td>-</td>
<td>20,618</td>
</tr>
<tr>
<td>USA (RSA)*</td>
<td>-</td>
<td>-</td>
<td>14,530</td>
</tr>
<tr>
<td>Tanzania</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Uganda</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>-</td>
<td>-</td>
<td>254</td>
</tr>
<tr>
<td>Other**</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

* Maize donated by Tanzania to Zambia not induced (10,000 MT in early 2002)
* Some maize entering Zambia from Tanzania via smuggling not captured.
* A lot of mealie meal was imported from RSA during 2001 - 2002
* Imports from RSA for the year 2002 include World Food Programme imports of 12,000 MT valued at US$1.9 million

Market assessment and baseline study for maize-Zambia
2.8 Maize Exports

Zambia has in the past exported maize in times of surplus production, although government policy restricts exportation during times of food shortages. A maize export ban is in place at present. For example, a maize export ban is presently in place. During periods that Zambia has exported, most transactions have been with neighbouring countries, such as: the Katanga Province in the DRC and Angola where, Zambia’s close proximity provides an advantage over other producers with regard to transportation costs. Only about USD 1.5 to 3.0 million of white maize and maize meal are normally exported through official channels. This does not however include transactions carried out through informal cross-border trade. It has been observed that cross border trade has continued despite the export ban. Though it is difficult to ascertain the exact amount of maize involved in cross border trade, it is estimated that between 50,000 to 100,000 metric tonnes are exported annually.

Following the liberalisation of maize marketing in the early 1990s when the government stopped the financing of maize purchases, the growing of maize for surplus marketing has diminished steadily mainly due to sub-economic producer prices local grain buyers have been offering, especially at the on-set of the marketing season.

While the commercial sector contributed about 30% of the total maize marketed surplus from the 80s to the early 90s their current contribution has reduced to less than 15 percent.
3.0 VALUE CHAIN ANALYSIS

3.1 Characterization of Maize Trading Structures – The Private Sector

Earlier sections have discussed production structures and supply and demand of maize. For purposes of the value chain analysis (VCA), high maize production areas in Eastern, Central and Northern provinces were covered. In addition, the analysis focuses on off farm maize trading through to the retailing of finished products such as maize meal and stock feed. This was made on the main consumption areas located in Lusaka and Copperbelt provinces, and the areas with a high concentration of production, trading and processing activities.

Prior to the liberalization of maize marketing, state sponsored public companies were responsible for buying maize from farmers and uniform pricing was applied across the country. However, after liberalization, the sector has experienced an increase in the number of private maize traders, who can be classified into the following categories:

**Large Scale Traders:** These are usually established business entities, varying between those who specialise in commodity and/or grain trade and, those whose core business may not necessarily be maize trade. Some are transporters and others are shopkeepers. They are characterized by handling large volumes of maize and have their own transport (trucks). Their source is mainly maize bought directly from large-scale commercial farmers and emergent farmers. They also use individual buying agents to act on their behalf and scout farming areas for maize from small-scale farmers. In most cases, the large-scale traders sell the maize to large millers. The specific number of large-scale traders is not known but it is estimated that there are around 12 main operators.

Notable among which, are:

i. Omnia Fertilizer and Imex who are primarily input suppliers (fertiliser) and on occasion, offer farmers the choice between cash and trading their maize for fertilizer on a two for one swap basis (i.e. 100kg of maize = 50kg fertilizer);

ii. CHC Commodities, Glencore, Sable Transport, B&P Commodities, Imex, Dar Farms and Amanita Zambiana who also deal in other grains and agricultural commodity trade and transportation. These have dedicated marketing and transport infrastructure that is used to support commodity trading and export maize during periods of surplus.

iii. Another group comprises traders who also operate out-grower schemes, either in maize or other crops. This category includes-OTK, Senegallia Farms and Bimzi Limited. They mostly operate as seasonal medium-scale trader.

iv. Milling companies that either use internal buyers or sub-contract this role to agents.

Market assessment and baseline study for maize-Zambia
Many of the maize traders falling under this category tend to be foreign owned with diverse interests including: maize milling, edible oils processing and export trade. For them, the primary objective is to secure sufficient raw materials for domestic processing (maize milling, oil extraction, etc.) for local and international trade. They either operate a network of collection points with only a few of the collection points being permanent.

**Medium-scale traders:** For this category, agricultural trade is typically just one aspect of the different business activities that they engage in. Other business interests may include running wholesale shops as well as transport services. A few of these companies also have a limited capacity to process maize and oilseeds to meet local demand. They typically send their own buyers into the field with a small truck to buy directly from farmers. Because there are very few established village level markets in most farming areas, the time it takes to collect a full load depends on the buyer’s knowledge of the area and ability to reach an area faster than rival firms.

In practice, an especially important function of these medium-scale traders is to serve as intermediaries between the large companies based in Lusaka and small-scale farmers. Many of the purchases carried out at the village-level are undertaken as part of a contract to supply large processors and trading companies. If one of the larger traders seeks to obtain, say, 500 metric tonnes of maize, a common practice is to contract one or two medium-scale buyers to source the commodity on its behalf. In some cases, this may even involve pre-financing of traders to allow them purchase of the required quantities. The large firms all reported that they prefer dealing with middlemen because of their reliability and accessibility as opposed to the more widely dispersed smallholders. This approach also saves large firms the trouble and expense of operating their own fleet of small trucks at the village-level.

**Small Scale Traders:** Small-scale traders (also known as “briefcase buyers”) generally have limited working capital, which they build on using profits from the trade. They buy the maize from small-scale farmers either by going to the farmers or setting up makeshift buying points. In most cases, they do not have their own transport and have therefore to rely hired means after bulking their purchases. They tend to go deep into the remote areas to buy maize from small-scale farmers in rural areas, and then transporting the same to a central place using ox-carts, ox drawn sledges and bicycles.

The central place is usually close or alongside major roads leading to markets either within or outside the region. The volumes they handle per transaction with a farmer are usually very small – anything from less than a bag to one or two bags. In order to cover their transport costs, there is a limit on the minimum number of bags they buy. This may range from 50 to 100 bags. This takes about three to four weeks. However according to information gathered through various interviews carried out in Nyimba, Eastern province, some small scale traders stay in rural areas for as long as two months in order to buy about 500 bags.

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7 A survey carried out by the MAC, Food Security Division in 1994, indicated that their weekly turnover ranges between 500 to 4000 x 50Kg bags.

Market assessment and baseline study for maize-Zambia
Small-scale traders sell their maize mostly to end consumers both within the region and without at public markets. This way, they assume the role of a retailer. Some of the maize is sold to established retail traders who operate at public markets. In other cases, small-scale traders act as middlemen or brokers between large-scale traders, milling companies and even retailers for a commission. They may also engage in informal cross-border trade.

**Market Traders:** Retail maize traders are established and usually operate in public markets. They buy maize from small-scale farmers as well as small-scale traders and then sell to consumers in smaller quantities. According to the MAC-Food Security Study, their turnover is in the region of 1-3 x 90 kilogram bags a day.

**Direct Sales by Commercial Farmers:** As indicated in the earlier section, commercial farmers tend to have structured marketing linkages directly with millers and/or large-scale traders. In some cases, they produce maize under forward contracts with such buyers. Commercial farmers account for the bulk of officially traded local maize, especially with millers.

**Other Transactions:** Direct transactions between farmers and consumers are quite important, particularly within regions. Consumers, mostly in urban areas, buy their maize from small-scale farmers at public markets and take it to privately owned hammer mills for milling. This approach by consumers has been given impetus by the promotion of hammer mills throughout the country following the liberalization of the sector, and privatization of the public sector owned milling companies. The quantities involved are usually very small. Usually a farmer will carry a few bags of maize to the public market, using ox-carts and sledges for direct sale.

**Hammer Mill Operators:** Other players in the trade are hammer mill owners who are mostly located in rural areas. They sometimes buy maize directly from farmers and resell it to consumers in either un-milled or milled form. Hammer mill owners interviewed in Lundazi and Nyimba indicated that charges range between K1,500 and K2,500 respectively to mill a 20 litre container of maize which is equivalent to about 20 kilograms of maize.

### 3.2 Impact on Small-sale Farmers

For each of the above maize traders, the fundamental objective is to buy for as low a price as possible and to sell for a much higher price. Since economic liberalization, the prices for many of Zambia’s agricultural commodities now experience huge price fluctuations within the same marketing season. This makes speculation a profitable business. For farmers, however, the outcome of this situation is mixed. First, most farmers are only slowly beginning to understand the cyclical nature of commodity prices and usually tend to believe that they are being cheated when they sell for a low price at the beginning of the season only to find out that much higher prices were being offered. An article in a local daily is reproduced in the box below to demonstrate the absurdity of the situation.
Police probe chief Chibale for assault

Police in Serenje are investigating a matter in which chief Chibale is alleged to have assaulted a maize buyer from Lusaka. Both Central Province Police Commanding officer Auxienso Daka and chief Chibale himself confirmed the investigations. Chief Chibale in an interview in Kabwe also confirmed being investigated on assault related charges but denied committing the offence. He said that the allegedly assaulted maize buyer misconducted himself before the chief.

“The man believed to be from Lusaka was sent by his masters to exploit my subjects. The man is still in my area and his stacks of maize are still there”, chief Chibale said. “What happened was that when I directed my subjects not to sell their produce cheaply to the so called businessman, he became upset and used vulgar language towards me. He even poked his finger in my face and that prompted my retainers and subjects to initiate safety measures to protect me from being beaten as their chief, that is how he could have decided to intimidate traditional loyalty and respect to report the matter of assault to the police.”

And chief Chibale has banned unscrupulous traders intending to buy maize cheaply in his area. Chief Chibale said some dealers were buying maize for as low as K1,500 per 5kg potion from last year’s K5,000 prices. He said any trader who wished to buy maize in the area after the ban is lifted sometime in August would not be allowed to trade in second hand clothes.

“I do not want the business of coming with second hand clothes or commodities because that is cheating our farmers. Barter system in the current economy is exploitative,” chief Chibale said. Chief Chibale has since called on the government to come up with a standard selling price of maize. If government does not respond on how maize should be sold of bought this season the desire by government to end hunger shall just be a dream because crooks will continue to rob poor peasant farmers in our villages,” said chief Chibale. He said maize prices should not be left to the dictates of traders because their aim was to exploit poor farmers.

Furthermore, most small-scale farmers do not have the capacity to take advantage of seasonal price variations due to lack of storage facilities and the need for cash immediately after harvest. Most importantly, the seasonal price cycles for maize are notoriously large with mill prices often increasing by more than 30% over the course of each buying season.

As indicated earlier, most farmers are unable to take advantage of this pattern due to the lack of storage capacity and need for cash immediately after harvest. In reality, this means that many farmers actually lose money from maize since the net profits are not sufficient to afford the inputs needed for the next year’s crop. For Eastern Province, one of the main maize growing areas, this situation is compounded by the fact that maize sells at about 10% - 20% less per 90kg bag than in parts of Central and Southern Province which are closer to the urban markets and therefore enjoy lower transportation costs.

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3.3 Institutional Maize Trading Structures

Apart from the private maize traders, other actors include government agencies, international aid agencies and Non-Governmental Organisations (NGOs). These intervene in the market mostly for strategic reasons, either to fill supply gaps, provide secure markets for small-scale farmers based in outlying areas or, to access maize meal for re-distribution to vulnerable groups.

Food Reserve Agency (FRA)

The Food Reserve Agency (FRA) was established in 1996, as a statutory body with the mandate to manage national food reserves. Its main functions are to:

- Purchase maize in the domestic market for the national food reserve
- Manage and administer government storage facilities
- Collect and disseminate information on grain trading, processing, stocks and prices
- Introduce weighing and grading standards
- Establish and conduct a program for an annual registration of traders and processors of designated commodities program.

The FRA has been an intermittent participant in the maize market. For example, in its first year of operation (1996/97 marketing season), FRA purchased a total of 15,000 metric tonnes of maize for strategic reserves. In the next season, it purchased about 4,500 metric tonnes. It has stayed relatively inactive, largely performing the role of a monitoring agency of contracts entered into by the Government and millers with foreign suppliers. From 1998, the FRA was directed by the Government to start providing seasonal inputs (fertiliser and seeds) on credit to small-scale farmers who would repay with maize during the marketing season. This new mandate was to fill the gap left by traditional seasonal credit and input suppliers/buyers of maize (before de-regulation). A number of small-scale farmers in remote areas could not be effectively serviced by the new regime of private agents due to poor roads and inherently high transportation costs.

During the 1998/99 marketing season, and in response to the national deficit and a government directive, FRA imported about 200,000 metric tonnes that was then passed on to private traders and millers under a subsidy credit scheme. Under this scheme, FRA contracted private traders, transporters, millers and cooperative societies to act as its distribution agents. The arrangement provided that the FRA was to be paid after such agents had sold their stock.

Since then, most of such contract distributors have not been able to repay FRA, in effect accumulating huge unpaid debts to the tune of K30 billion. Political interference has been cited as one of the main reasons for FRA’s failure to reign in the debtors. As a result, the FRA could not fulfil its mandate. It is heavily dependent on the Government budget vote.

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9 Most such contract distributors were politicians or held strong linkages with senior Government officials. As such, FRA felt inhibited to pursue normal debt recovery procedures.
Zambia maize sector value chain analysis

Until the 2002/03 marketing season, FRA was using the open tender system to purchase maize from the market. Under this system, it used to invite supply tenders in lots of 50/100 metric tonnes. This approach however, had a negative effect on small-scale farmers who were unable to meet such quantity requirements. As a way of opening up the market to small-scale farmers, the government instructed FRA to appoint private warehouse managers to buy maize on its behalf. The maize traders and/or small-scale farmers can deliver their supplies directly to FRA buying depots located in surplus areas10, as long as these were in lots of a minimum of 5x50kg bags. Through this approach, FRA has since purchased about 9,800 metric tonnes of maize that it subsequently sold under commercial terms to the Office of the Vice President under the Disaster Management Unit for use as relief food. More recently, it was contracted to supply a further 13,500 metric tonnes to the same unit.

While this may have sorted out marketing problems faced by small-scale farmers in the selected areas, maize traders—especially large-scale traders, accuse FRA of driving the maize prices up in those areas. According to interviews carried out with traders in Lundazi and Nyimba, the maize buying price for traders was between K25,000 and K30,000 per bag compared to K40,000/bag offered by FRA. Later, towards the end of the season, traders were paying between K40,000/bag and K45,000/bag compared to K50,000/bag offered by FRA. Traders have therefore been accusing the FRA of unfair competition on the basis that its prices are supported by government subsidies. It also has the advantage of owning bulk maize storage facilities across the country, thus mitigating stock transport costs.

Where the FRA could play an influential role in the stabilisation of producer prices through stock hoarding, it has not been doing so. Instead, the focus has been more on seed and fertiliser input supplies, which it is not able to manage efficiently. It not only lacks the capacity for this role but it is arguably not part of its core business.

Local and International Aid Agencies

Various aid (donor) agencies and local NGOs are involved in buying maize locally mainly from large-scale maize traders for re-distribution as relief food to vulnerable groups, including refugees. In times of deficits, aid agencies also import maize to supply to vulnerable groups. This practice is common even during normal rainy seasons when some parts of the country still face food shortages owing to distribution problems and poverty.

In some instances, the maize is distributed free, while in other cases it is distributed through “Food for Work” projects (common among poor urban households). Some of the maize meant to be distributed as relief food ends up in public markets, due to targeting problems and diversions. The maize is sometimes sold at prices lower than the ruling market price. During this study it was established that donor aid occasionally drives maize prices up when sourced locally. In Lundazi, for example, a large-scale trader disclosed that they had a contract to supply a donor agency at an offer price of K68,000/bag which was higher than what any other buyer could offer including FRA, which was offering K50,000/bag at the time.

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10 These are: Mbala, Mpika and Nakonde in Northern Province, Lundazi and Mtilizi (Nyimba) in Eastern Province and Kabompo in North Western province.
3.4 Analysis of Maize Trade Flow Leaders

As can be noted from the above, there are numerous groups of maize traders. Data relating to the actual number of such categories is presently not available. It is however estimated that there are about 12 large-scale commodity traders active in the market. In addition, there are 15 officially registered members of the Millers Association of Zambia. In the case of medium to small-scale maize traders, estimates indicate that they could be in the range of 1,000 traders operating around the country. The estimated breakdown of each of the main categories is provided in Table 4 below.

Table 4: Number of trade flow leaders by region as at March 2003

<table>
<thead>
<tr>
<th>Maize growing Region</th>
<th>Single Agents</th>
<th>Small Scale</th>
<th>Medium - Large Grain reserves</th>
<th>Millers*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eastern</td>
<td>150</td>
<td>80</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>Central</td>
<td>100</td>
<td>80</td>
<td>4</td>
<td>1</td>
</tr>
<tr>
<td>Northern</td>
<td>80</td>
<td>30</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Copperbelt</td>
<td>30</td>
<td>30</td>
<td>6</td>
<td>1</td>
</tr>
<tr>
<td>Lusaka</td>
<td>50</td>
<td>80</td>
<td>8</td>
<td>1</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Exporters</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Central</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Northern</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Copperbelt</td>
<td>-</td>
<td>-</td>
<td>3</td>
<td>-</td>
</tr>
<tr>
<td>Lusaka</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>-</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Importers</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eastern</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Central</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Northern</td>
<td>-</td>
<td>-</td>
<td>-</td>
<td>1</td>
</tr>
<tr>
<td>Copperbelt</td>
<td>-</td>
<td>-</td>
<td>2</td>
<td>1</td>
</tr>
<tr>
<td>Lusaka</td>
<td>-</td>
<td>-</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>

* Numbers listed in regions include branches/subsidiaries of holding groups.

As indicated above, small-scale traders who import and/or export maize use unofficial or informal channels. On the other hand, the FRA is active in local purchases and imports. It does not export maize. The distribution of maize flow leaders is to some extent, arbitrary, since very little information has been collected and documented on their trading activities.
Zambia maize sector value chain analysis

3.5 Maize Production Forecasts

Visits are presently being undertaken by officials from the Ministry of Agriculture and Cooperatives in order to estimate maize production and marketing forecasts for the current season. Based on estimates made by the FRA and ZNFU, the projected numbers are as laid out in Table 6 below.

**Table 6: Maize Availability Calendar and projections (2002/2003 season)**

<table>
<thead>
<tr>
<th>Region</th>
<th>Month(s) of the year when maize is harvested</th>
<th>Month(s) of the year when maize is available for trading</th>
<th>Production projections for the period 2002/2003</th>
</tr>
</thead>
<tbody>
<tr>
<td>Region 1</td>
<td>May/June</td>
<td>July-March</td>
<td>206,000</td>
</tr>
<tr>
<td>Region 2</td>
<td>May/June</td>
<td>June-January</td>
<td>571,000</td>
</tr>
<tr>
<td>Region 3a</td>
<td>May/June</td>
<td>June-November</td>
<td>94,000</td>
</tr>
<tr>
<td>Region 3b</td>
<td>April/May</td>
<td>June-August</td>
<td>29,000</td>
</tr>
</tbody>
</table>

Based on the projected production and marketing quantities for this season, the likely surplus/deficit is indicated in Table 7 below.

**Table 7: Projected maize surplus/deficit for the 2002/2003 season**

<table>
<thead>
<tr>
<th>Permutations</th>
<th>Metric tonnes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carry over stocks</td>
<td>500,000</td>
</tr>
<tr>
<td>Long rains harvest</td>
<td>900,000</td>
</tr>
<tr>
<td>Short rains harvest</td>
<td></td>
</tr>
<tr>
<td>Imports (cross border)</td>
<td>100,000</td>
</tr>
<tr>
<td>Total</td>
<td>1,500,000</td>
</tr>
<tr>
<td>Less consumption</td>
<td>1,400,000</td>
</tr>
<tr>
<td><strong>Projected surplus /(deficits)</strong></td>
<td><strong>100,000</strong></td>
</tr>
</tbody>
</table>

3.6 Maize Pricing

As indicated in earlier sections of this report, the marketed price of maize changes quite considerably through the value chain. In particular, farm gate prices can vary very sharply, depending on the period of the marketing season and supply position in the rest of the main consumption areas that are also deficit producers. This situation has not been helped by the interventionist role played by Government. Government interest tends to focus on consumer welfare, and in particular, with respect to the price of maize meal. This influences backward trading prices for maize down the chain, as millers have a major influence on the price for which they will buy the maize—the ultimate market for most buying agents (see chart on next page). Millers tend to be the focal point for Government interventions in the pricing of maize meal sold to final consumers.

As a result of government interventions, maize meal prices also tend to fluctuate quite considerably within each year. For example, in April 2002, the average price of maize meal was K27,000/25kg bag. And within a fortnight (June 6-18, 2002) the price reduced to K21,000/25kg bag. But by June 20, the price had reverted to K25,000/25kg bag. During the
Zambia maize sector value chain analysis

rest of the year, the upward trend continued, and by December it had reached K40,000/25kg bag. This period also coincided with the actual local maize shortage.

From February this year, the downward trend was noticeable when the price fluctuated between K29,000 to K33,000/25kg bag. Presently, the average price is at K25,000/25kg bag. Estimates are that the price is likely to stabilise at around K20,000/25kg bag in the near term of two months.

This situation creates difficulties for farmers, traders and millers along the value chain. The government recently announced that it would not set a floor price as demanded by farmers on the basis that this would be against the policies embodied in the deregulated market regime. The government has intimated that it would offer a price of K30,000/50 kg bag (or about US $125/metric tonne) to small-scale farmers in outlying areas through the FRA’s marketing systems. This has invoked mixed reactions from farmers who consider that the break-even price should be US $140/metric tonne and feel that the government has invariably set a ceiling price.

Farmers find themselves in a difficult position when negotiating with traders because they lack the necessary market information and predictability of government actions. Based on current price movements and average purchase prices along the value chain, the anticipated structure of margins are indicated in Table 8 below.

<table>
<thead>
<tr>
<th>Transaction point</th>
<th>(1) Farm price</th>
<th>gate/buying price</th>
<th>(2) Selling price</th>
<th>Value added on % ((2)-(1))/(1)*100</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farmer</td>
<td>25,000</td>
<td>30,000</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Small trader</td>
<td>30,000</td>
<td>36,000</td>
<td>20</td>
<td></td>
</tr>
<tr>
<td>Retailer</td>
<td>36,000</td>
<td>40,000</td>
<td>13</td>
<td></td>
</tr>
<tr>
<td>Larger trader</td>
<td>40,000</td>
<td>45,000</td>
<td>10</td>
<td></td>
</tr>
<tr>
<td>Millers</td>
<td>45,000</td>
<td>52,000</td>
<td>15</td>
<td></td>
</tr>
</tbody>
</table>
MAIZE MARKETING CHANNELS

Key:
- MAJOR CHANNEL
- MINOR CHANNEL
- OCCASIONAL CHANNEL

FARMER

COLLECTOR-RETAILER

PERMANENT RETAILER

HAMMER-MILL

LARGE MILLING

MIDDLEMEN

LARGE-SCALE TRADER

CONSUMER
4.0 POLICY AND REGULATORY ENVIRONMENT

4.1 Policies in support of maize production

Maize conjures high nationalistic sentiments in Zambia. This is mainly due to the fact that it is an important staple food and affects food security and incomes of about 80% of the population. Its dominance as Zambia’s main staple largely evolved through the previous government’s (the era before 1991) policy of achieving food self-sufficiency. The primary objective was to provide inexpensive food to the urban consumers, while using maize production as a means of re-distributing wealth to the rural areas – to achieve balanced development. Notable features of this policy that placed maize production at the centre of agricultural activities included:

- Limiting of seasonal credit to maize production
- Focusing extension services and research support to the expansion of maize production
- Use of a single channel system for the distribution of key inputs (seed and fertiliser) and marketing of maize produce
- Government’s direct involvement in the setting of pan-territorial producer prices for each season
- Provision of transport, seed and fertiliser subsidies
- Implementation of official controls over maize meal prices.

Under this environment, maize growing was propagated throughout the country even in those areas/regions where: agro-ecological factors did not allow for its efficient production. Maize therefore also served to displace more drought tolerant staple crops grown traditionally, such as millet, cassava and sorghum. Elsewhere, maize competed and degraded opportunities for increased production of other higher value export crops, such as, groundnuts, tobacco and cotton in the Eastern province. Government intervention has impacted variously during this era. Notable resultant features include:

i. The substantial increase in maize production from an average of 1.1 million tons in the early 1980s to 1.6 million tons by 1990. Surplus production tended to go to waste due to the anti-export policy bias whose cost was being absorbed by the Government.

ii. The rising share of small-scale and emergent farmer contribution to the total national production of maize, accounting for about 80% by 1990 from an earlier average of 60% during the early 1980s. Commercial maize production had correspondingly reduced over the same period as this category opted to diversify into non-traditional crops.
iii. Increases in the share of marketed maize sales in deficit regions due to the policy of pan-territorial pricing and subsidies. Correspondingly, traditional surplus areas that could afford to produce maize more efficiently lost their market share as the crop could be transported from outlying areas to urban consumption centres at subsidised rates.

iv. Diffusion of maize cropping skills and practices across the country through Government-led propagation programmes. Small-scale farmers across the country acquired basic skills of maize growing thus establishing a foundation for household food security. Since the government offered a ready market, cost efficiency and productivity played a secondary role as the focus was on increasing production quantities. Small-scale farmers did not therefore have to worry about factor costs, producer prices and availability of demand on the market.

v. The adoption by many small-scale and emergent farmers of hybrid maize seed varieties in response to subsidised inputs and supported producer prices. According to the World Bank assessment, the increase in use of hybrid varieties from about 30% in 1985 to 57% by 1990 represented one of the highest adoption rates in Africa. The effect of this was to also instigate the increased use of fertilisers and chemicals that had an impact on farming systems and invariably also increased the actual cost of production. Such a change in production cost structure could only be mitigated by increased yields.

vi. Heavy subsidies provided for chemical fertilisers reduced the incentive for practising crop rotation and conservation farming. Instead, the subsidies encouraged maize mono cropping and dependency on chemical fertilisers.

Although this policy environment managed to stimulate increased maize production, the government subsidy systems and price controls meant that maize was traded at lower than its true cost throughout the value chain. However, reliance on maize as a national staple and basis of achieving food security has given it sensitive political status. For example, the attempt by the previous government to remove maize subsidies in 1986 led to major food riots. When a similar attempt was made in 1990, a coup d’etat almost resulted, which also provided the fertile ground for the political changes that saw the government lose power in 1991 under a democratic dispensation.

Production policy changes have led to improved producer prices of most cash crops thus, encouraging farmers to diversify towards non-staple crops such as cotton and tobacco. One of the other features of new agricultural policies has been the re-focusing of extension services away from the emphasis on maize propagation towards non-staple crops and cash crop production.

In addition, the rising cost of fertiliser has made maize an expensive and difficult crop to produce on a commercial basis. In the case of small-scale farmers, this has been compounded by the unstructured systems of seasonal loans and input supply, poor maize pricing and marketing arrangements. The uncertain nature of business transactions, including the possible risk of export bans and price manipulation, has also contributed to the reduction in yields, especially among commercial farmers. This has had the additional effect of reducing overall national maize output and average yields (discussed in more detail in the next section).

4.2 Market Liberalisation

Since the early 1990s, Zambia has been implementing structural reforms aimed at re-orienting the economy and stimulating growth. These measures have included:

- Macro-economic stabilisation aimed at reducing inflation, interest rates and the fiscal deficit.
- Liberalisation of markets and exchange rates. These measures have been supported by the removal of subsidies, price and foreign exchange controls.
- Privatisation of public enterprises supported by measures to stimulate private-sector led economic growth such as:
  - The introduction of an Investment Act offering incentives for new investment as well as the expansion of various investment activities. More recently, the Export Processing Zones Act was introduced offering special packages for producers of non-traditional exports goods.
  - Streamlining tax administration systems and the introduction of tax incentives for farming enterprises and producers of non-traditional exports (NTEs). For example, farming enterprises attract corporate tax of 15% as opposed to the normal rate of 35%.

The economic reforms started after the year 1991 included the official removal of food subsidies, price controls and de-regulation of agricultural markets. Specific to maize, the following policy changes are noteworthy:

- In 1992, steps were taken that resulted in the removal of milling, fertiliser and transport subsidies.
- From 1993, the private sector was encouraged to take up the role of input supply and maize marketing. This followed the dismantling of intermediaries/agents that operated under the aegis of the Zambia Co-operative Federation (ZCF). This initiative was supported by the provision of Government loans to private sector agents under preferential terms.
- In 1996, the Government established the Food Reserve Agency (FRA) with the primary aim of securing strategic stocks of maize. The FRA also took over the
management of the maize silos, district depots and sheds previously under the control of ZCF. The FRA was expected to act as a buyer of last resort – as a way of stabilising domestic prices of maize after the de-regulation of markets.

The overall policy direction of the government towards agriculture has been to facilitate and support the development of a sustainable and competitive agricultural sector that assures food security at national and household levels and maximises the sector’s contribution to Gross Domestic Product (GDP). Agriculture is thus considered as the prime engine for achieving broad-based economic growth and poverty reduction. In this regard, emphasis has been given to liberalizing the sector and promoting private-sector participation in production, marketing, input supply, and credit. More specifically, the current government’s policy objectives for agriculture can be summarised as follows:

i. Ensuring national and household food security through dependable annual production of adequate supplies of basic foodstuffs at competitive costs.

ii. Contributing to sustainable industrial development by providing locally produced agri-based raw materials.

iii. Increasing agricultural exports thereby enhancing the sector's contribution to balance of payments.

iv. Generating incomes and employment through increased agricultural production.

v. Ensuring that the existing agricultural resource base is maintained and improved.

In line with the above, the government has adopted a “two-pronged” strategy of stimulating agricultural development. First, it has addressed the need to create an enabling environment for increased private sector participation in order to promote investment in commercial farming. Two, it has been addressing issues connected with assisting small-scale farmers to improve production methods and secure markets for their produce as part of poverty reduction programmes, and to increase farm-based incomes. The major thrust has been to encourage crop diversification- moving away from over dependence on maize growing, to cash crops mainly for export. Some of the specific steps taken for each intervention area are briefly discussed below.

**Measures Implemented to Stimulate Increased Private Sector Participation**

The strategy adopted by the government has been to offer tax incentives and provide serviced farming blocks in order to attract private sector investment, mainly large-scale commercial farming and agro-processing.

The incentives available to investors in agricultural enterprises include:

- Duty-free imports of agricultural machinery for Investment License holders.
Income tax on ordinary farming profits is charged at 15% instead of the normal rate of 35%. Agro-processors are also eligible for the 15% income tax on profits accruing from export earnings.

An agricultural enterprise located in a rural area and holding an Investment License pays one seventh of the normal 35% corporate income tax in its first 5 years of operation. Dividends payable to farmers are also tax exempt for the first 5 years of operating.

Capital expenditure on farm improvements qualifies for an allowance of 20% per annum for each of the first five years. In addition, a "substantial" rate of depreciation may be applied that effectively allows farm machinery to be rapidly written off against tax.

Customs duty on agricultural inputs such as bovine semen, animal embryos, fish and the medium used for growing roses has been removed. In the same breath, duty on greenhouse plastic sheeting, tubes, and hollow profiles have been reduced from 25% to 15% for enterprises engaged in floriculture. Equally, duty on cold-room equipment has been reduced from 25% to 15%.

Farming enterprises are also eligible for a full allowance on expenditure applied for land development, conservation, and other costs. They can also claim "special development allowances" for growing export crops such as, tea, coffee, bananas, and citrus fruit.

In response to this regime of incentives, there has been an improvement in private-sector participation in agriculture. This however remained below expectations due to structural constraints that include, poor infrastructure (such as roads, bridges, telecommunications, electricity and lack of storage facilities); lack of/or poor access to credible marketing institutions; inadequate credit facilities; low output and high input prices; macroeconomic instability, all mirrored in high inflation and high interest rates.

The government has taken concrete steps to identify farming blocks for release to commercial farmers. These farming blocks will however, require public investment in order to establish basic support infrastructure. Past attempts at establishing farming blocks have not been accompanied by serviced infrastructure to attract private investment.

**Measures Implemented in Support of Small-scale Farmers**

The sudden liberalisation of agricultural markets, especially the dismantling of institutional arrangements in place for credit, input supply and marketing of produce (cooperatives and ACF) adversely affected small-scale farmer since most of them were ill prepared for this new environment. Under this new policy regime, small-scale farmers faced major difficulties in accessing inputs and could not effectively negotiate fair prices for their produce with the private sector marketing agents.

In response to this, the government expanded the mandate of the FRA to include direct involvement in the supply of seasonal credit, fertiliser, seed inputs and purchases of maize.
from small-scale farmers based in outlying areas of the country. During 2002, the government decided to replace the FRA with the Crop Marketing Authority (CMA) to act as the “buyer of last resort” for selected crops in outlying areas, especially maize. It is envisaged that the CMA will contribute to increased food production and improved incomes for small-scale farmers since it would buy produce at a price that would enable farmers to recover their production costs. Presently the government is holding consultations with stakeholders ahead of the establishment of the CMA.

In addition, the government introduced the Agricultural Sector Investment Programme (ASIP) in 1996. One of the major aims of ASIP is to act as an instrument for the coordination of agricultural development by addressing infrastructural and technical support needs of small-scale farmers, including marketing and credit supply.

While ASIP provided a foundation for the development of the sector, set out goals were not met largely due to an unfavourable macroeconomic environment, inadequate resource availability, poor agricultural infrastructure and, slow private-sector response. ASIP has since been replaced (from 2002) by the Agricultural Commercialisation Programme (ACP). The priority components of the ACP over the next five years (from 2003 to 2007) are:

- Marketing, trade and agri-business promotion
- Agricultural finance and investment
- Agricultural infrastructure and land development
- Technology development and dissemination
- Agricultural sector management and coordination

The focal area of the ACP is to promote market linkages and commercialisation as well as building a culture of business entrepreneurship and ethics among all actors in the sector. This is to be achieved through targeted support to small-scale farmers aspiring to commercialise their activities in such areas as crop production, land management, business and marketing. Its goal will be to encourage small-scale farmers to become medium-scale producers. Through this initiative, it is envisaged that the livelihoods of small-scale farmers will benefit from improved food security and increased incomes.

As an integral part of the aforementioned initiatives, the government has also identified agriculture as the leading sector for food security, economic growth, and poverty alleviation in the Poverty Reduction Strategy Paper (PRSP). The government’s goal is to reduce poverty by 50% by 2004 (from the current level of about 80% as a proportion of the total population). The PRSP process has focussed on the need to pay closer attention to the vast majority of farmers, who are mainly small-scale producers.

4.3 Maize trade policies and regulations

Zambia’s trade policy is based on market liberalisation principles that are aimed at creating a competitive and productive economy, which is conducive to private sector investment. The primary objectives can be summarised as follows:

- To maintain an open economy with a liberalised import and export regime that supports investment and industrial development.
To encourage the production of exportable products and continue with the process of diversifying the export base.

To support and encourage exports of value added goods.

To seek new markets and strengthen Zambia’s trading ties with regional and other international markets.

To ensure efficient customs administration and fair trade practices.

To reduce poverty through sustainable economic growth.

4.3.1 Maize Export/Import Licensing

Despite the implementation of economy-wide market liberalisation policies, the government still regards maize as a strategic crop and continues to play an interventionist role. For instance, the Minister of Agriculture and Cooperatives has the authority to restrict the export of grain and grain products, especially during periods of national food shortages. Currently, an export ban applies to maize, millet, sorghum, and related crops. This has major policy implications on the current and future market structures regarding maize as a commodity for cross border trade.

The main complainants of export bans are milling companies that have a traditional maize meal market share, especially in the DRC’s Lubumbashi Province. The millers feel that they should always be considered for some minimum exports even during the ban so that they raise minimum amounts of foreign currency for spare parts and servicing of plant and equipment.

Commercial farmers, especially those growing early maize under irrigation have equally expressed concern over export restrictions saying the local market producer prices fall far below their unit costs of production per tonne, and as such feel the government should consider then for exports to DRC where the producer prices tend to be much higher than in Zambia.

4.3.2 Customs documentation and procedures

Maize imports/exports are subject to standard customs procedures that also apply to all other commodities. The procedure for exporting maize starts with an application form being obtained from the Ministry of Agriculture, thereafter the export seeks a Phytosanitary Certificate from The Plant Inspection and Quarantine Service Unit at Mount Makulu Research Station before submitting both forms to the Ministry of Agriculture, through the Ministry of Commerce for final issuance of an export permit at the Trade Section of the Ministry of Agriculture and Cooperatives.

The Zambia Revenue Authority (ZRA) can only waive duties on imports of maize after a request by MAC through the Ministry of Finance and National Planning. Exports of maize
do not attract any duties or taxes other than the completion of normal customs documentation and a Phytosanitary certificate.

4.3.3 Phytosanitary measures

Maize, like all other agricultural produce is subjected to Phytosanitary regulations. It is mandatory that before importation is done, Phytosanitary Import permits be obtained from the following services points of the Zambia Agricultural research Institute – Mount Makulu (head office), Chipata (for Eastern Province), Chimundu, Livingstone, Nakonde and Chalimbanda. Cooper Belt and North Western Province are not well serviced.

Conditional declaration conditions for imports from the COMESA region include certification against the Large Grain Borer. It is also a requirement that a Phytosanitary certificate be issued to accompany all maize exports, certifying that the declaration conditions, as stipulated by the importer, are met. The import/export permit documentation is also used for statistical purposes—that is, capture trade data.

The Plant Inspection and Quarantine service recommended the need for harmonisation of Phytosanitary regulations across the COMESA region, sharing of pest risk information and how the risk is being managed in each country. This process should benefit from the Southern Africa initiative (SADC Regional Plant Protection Committee) on harmonisation of Phytosanitary requirements.

4.3.4 Food health and safety standards

The Plant Inspection and Quarantine Service Unit has officers manning all borders that carry out clinical inspections of all grain entering the country. Except where further need arises does the Ministry of Health’s Public Health Department get involved. For example, in 2001, maize meal milled from maize grain imported from Uganda turned out to be bitter and the public expressed concern on the Copperbelt. The Ministry of Agriculture and Health worked together to test samples at the UTH lab and the mealie was found to be unfit for human consumption. The identified cause was that some wagons carrying the Ugandan maize were soaked on their way to Zambia and the plant inspector at Kapiri Mposhi Tazara station did not detect the problem.

4.3.5 Quality Standards

The importation of maize is subject to SPS inspection and a fumigation certificate against the Larger Grain Borer (LGB) by the Plant and Quarantine under the Ministry of Agriculture and Cooperatives. The present certification standards applied for maize are based on a harmonised structure developed by the Zambia Bureau of Standards (ZABS) in conjunction with private sector stakeholders.

Prior to the liberalisation of agricultural markets, standards for grading maize in Zambia were enshrined in the 1969 National Agricultural Marketing Act. These standards were used by state enterprises when buying maize locally as well when exporting or importing the maize. In addition, maize prices were differentiated based on the grades specified in the Act.
After the liberalisation of the sector, there has been no monitoring of standards and grades. Equally, maize prices are no longer based on the grades. A new set of standards has however, been developed by ZAB in agreement with the private sector. It encompasses the harmonisation of standards set in the National Agricultural Marketing Act, with the outcome identified for use, documented as follows:

<table>
<thead>
<tr>
<th>Item Description</th>
<th>Maximum % Limit</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Moisture content</td>
<td>12.5</td>
</tr>
<tr>
<td>2. Extraneous matter and damaged grain</td>
<td>1.5</td>
</tr>
<tr>
<td>3. Broken grain</td>
<td>6.0</td>
</tr>
<tr>
<td>4. Other coloured grain</td>
<td>3.0</td>
</tr>
<tr>
<td>5. Total other defective grain:</td>
<td>12.0</td>
</tr>
<tr>
<td>a) Discoloured grain</td>
<td>2.0</td>
</tr>
<tr>
<td>b) Insect/pest damaged grain</td>
<td>5.0</td>
</tr>
<tr>
<td>c) Diseased grain</td>
<td>2.0</td>
</tr>
<tr>
<td>d) Immature or shrivelled grain</td>
<td>1.0</td>
</tr>
<tr>
<td>e) Fungal damaged grain</td>
<td>1.0</td>
</tr>
<tr>
<td>f) Germinated grain</td>
<td>1.0</td>
</tr>
</tbody>
</table>

The use of the new standards is optional, as importers and exporters of maize tend to specify the quality requirements as part of supply contracts. A key weakness of the current arrangements is that the provisions of the Act used in setting the standards are not enforceable by law.

However, the Food and Drug Act and the provisions of the Plant Quarantine can be used to control the quality of maize imported into the country on account a directive from the Minister of Health or Agriculture and Cooperatives, respectively.

As already indicated, the process of directing maize imports tends to be heavily influenced by the government either, as a direct purchaser or intermediaries for commercial transactions involving the private sector or the FRA. This is largely due to the government’s interest in protecting consumer prices for maize meal. The involvement of government has fuelled outcry among the private sector, since they consider this as being destructive to the operations of a liberalised market. The actions of the government are seen as being based more on short-term social and political considerations rather than long-term market development considerations.

An example given relates to the 2001/2002 marketing season, when the government through FRA arranged for the importation of about 150,000 metric tonnes of maize, which was later sold to milling companies at a subsidized price on condition that they sell their milled maize at set prices. Clearly, the government was worried about the rising prices of maize meal, which if left unchecked, could cause social and political instability. Unfortunately, not all the millers benefited from this arrangement. This exposed millers outside these arrangements to unfair competition as a result of the subsidy enjoyed by their competitors.

Millers who were not part of this arrangement had to pay the full cost of importing the maize and at the same time compete with the lowly priced maize meal schemes sponsored by the
government. Private companies therefore feel that they are faced not only with poor financial factors, but also indeterminate market interferences by GRZ.

During the 2002/2003 marketing season, Zimbabwe and Malawi imposed export bans on maize as they were equally facing production deficits. Informal cross border trade was however, very prevalent with small to medium scale traders supplying millers through such arrangements. This form of trade has not been officially recorded in national accounts, but it is estimated to have contributed between 15,000 and 30,000 metric tonnes of supplies to the millers during this season.

Most of such informal cross-border trade takes place between Zambia and neighbouring countries experiencing either surplus or poor domestic prices. Border areas with surplus production tend to be further away from in-country consumption areas, notwithstanding the price differentials that may exist between the trading countries. For example, the Tete Province of Mozambique bordering Zambia had a good harvest but domestic prices were not as attractive as direct sales to Zambia. Informal cross-border traders took advantage of this situation and, using unofficial transit routes, supply Zambian millers with this stock. Similarly, Tanzania provided supplies to Zambian millers through informal cross-border traders.

4.3.6 Tariff on maize imports

Tariffs remain the main trade policy instrument that Zambia applies in relation to imports. Zambia has progressively liberalised and simplified its tariff regime with maximum tariffs lowered from 100% to 25%. The tariff structure comprises four tiers, ranging from 0 – 25%, applied to agriculture as follows:

<table>
<thead>
<tr>
<th>CATEGORY</th>
<th>IMPORT TARIFFS (MFN Rates)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>MIN.</td>
</tr>
<tr>
<td>RAW MATERIALS</td>
<td>0%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>CAPITAL GOODS</td>
<td>0%</td>
</tr>
<tr>
<td>INTERMEDIATE GOODS</td>
<td>15%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>FINAL GOODS</td>
<td>25%</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
</tbody>
</table>

* Essential to agriculture, especially maize production  
** To build capacity in the agricultural sector. Note that Maize imports in 2002 were given special tariff treatment of 0% due to the national production shortfall.

The tariff rate on imports of cereals for further processing, including maize, is at 5%, while that of maize meal (in milled form) attracts 15% duty. Both products are however zero-rated
for Value Added Tax. In the case of maize grain imports from COMESA member states that are part of the FTA, no duty is imposed. For non-FTA members of COMESA, the duty preference accorded is reciprocal—meaning that it is based on the tariff reduction rate that the exporting country accords to other COMESA imports.

Duty on other food products is in the range of 5% to 15%, with fertilizers being exempt as part of government effort to encourage agricultural expansion. Relatively high import tariffs apply to cash crops. For example, the maximum tariff rate of 25% applies to imports such as; edible tubers, fruits and nuts, prepared foods, coffee, tea, maté and spices, some edible vegetables, final use sugars and sugar confectionery products, most beverages and, tobacco products. No such charges are applied on maize imports.
5.0 SUMMARY OF KEY POLICY ISSUES

As Zambia’s basic staple food, maize remains an important crop and leading agricultural activity—grown around the country and dominating the total planted area. Following the implementation of economic liberalization measures, particularly the removal of price controls and production subsidies, this situation is gradually beginning to change. Farmers (especially those in outlying areas) are now giving increased priority to higher value cash crops while concentrating on cheaper to grow and more drought tolerant staples for on farm consumption like cassava, sweet potato and sorghum.12

5.1 Key Constraints

It is generally agreed that Zambia enjoys a comparative advantage for maize production in the region but has not been able to produce competitively. Ideally, Zambia should be a major supplier of maize to the region. A number of factors have been cited as hindering her ability to exploit its natural endowments and increase maize production. These include:

- High cost of finance which discourages investment in the expansion of maize production.
- Unpredictable markets, largely due to policy shifts by the government.
- Failure of forward contracts due to side selling or crop piracy.
- Poor communication and transportation infrastructure.
- Lack of bulk handling facilities for maize transportation.
- Weak institutional support.

High Cost of Finance

At present, access to finance to meet investment and working capital requirements is limited as banks are reluctant to lend to agricultural activities, which are seen to be rather susceptible to the vagaries of market uncertainty. In addition, where finance is available, the cost of borrowing, at interest rates that are in excess of 45% makes it difficult to achieve realistic returns. On the other hand, factor costs remain high, thus impacting negatively on production and competitiveness.

Small-scale farmers presently rely on subsidised seasonal credit to meet the cost of inputs required for maize production. In the case of commercial farmers, they have as a result mostly found it difficult to rehabilitate and/or replace plant and equipment required to improve production efficiency. Overall, Zambia lacks dedicated financial services that suit agricultural activities.

12 MSU, Food Security Research Project.
Policy Shifts and Unpredictable Markets

As described in the report, the government remains an active player in the maize sector by playing an interventionist role. This sends mixed market signals and creates unpredictability in the environment. Potential and existing investors in the maize industry are always wary of the risk of interference by government. The justification for caution is discernible in the often politically motivated decisions to import at below market prices and/or restrict exports. In addition, the government does not always keep to its policy commitments in support of agriculture. For example, budgetary provisions for supporting small-scale agriculture or financing of crop purchases by the FRA are not always provided as stated. Such situations send wrong signals to the market at points of the value chain.

Failure of Forward Contracts

Legislative weaknesses and lack of entrepreneurial discipline has tended to discourage private investment in maize out-grower schemes. Prosecuting loan defaulters is a tedious and frustrating process, a situation not helped by the government’s low recovery rates on its seasonal loans to small-scale farmers. This particular problem accounts for the reluctance of large maize traders to provide seasonal loans and/or pre-crop financing.

Partly as a result of this situation, initiatives have been taken to establish a system of warehouse receipts. Under this system, maize would be produced and moved to collection points under a collateral system, managed by a dedicated team of maize agents with the active participation of large traders, millers and banks.

Poor Infrastructure

Most maize growing areas have poor transport and communication infrastructure thus, increasing transaction costs. A number of areas are inaccessible, especially during rainy seasons. This makes it difficult for farmers to access inputs and marketing agents to collect the maize. Ultimately, small-scale farmers are forced to sell their maize below market levels to traders for lack of alternative buyers.

This also makes the transportation of maize to urban markets an expensive undertaking. At times, the costs involved are never recovered because the pricing structure is to subject external influence. Presently, road transport rates applying in Zambia are considered to be among the highest in the region.

Lack of Bulk Handling Facilities

The difficulties of transporting maize are further exacerbated by the lack of bulk handling facilities. In the present situation, all maize must be shipped in bags, a considerable additional cost. In addition, Zambia still uses 90kg bags that are difficult to handle and somewhat of an anomaly compared with other countries that have switched to more standard 50kg bags.
Weak Institutional Support

This is evident at two levels. First, the depth and breadth (including quality) of extension services support that is provided to small-scale farmers so as to improve farm management practices has been declining over the years. This is so largely due to under-funding of this critical service within the Ministry of Agriculture and Cooperatives. Secondly, there is a lack of decentralization of services provided by institutions such as the Ministry of Agriculture and Cooperatives (export and import permits), Zambia Revenue Authority and commercial banks, making the processing of documents (such as Rules of Origin certificates, export/import documents and duty drawback refunds very cumbersome and protracted.

There is no doubt that this increases the processing cost for farmers and maize traders based outside major cities, especially outside Lusaka, the capital city. A key factor has been the inability of institutions established to provide facilitation services to be responsive to the needs of the productive sectors. Much of this is attributed to under-funding, irreconcilable priorities, and lack of effective government supervision.

5.2 Maize Without Borders

Under the present environment, official cross-border trade in maize remains subject to government sanction, save for periods when the country has production surpluses. Much of the trade that is taking place is through unofficial channels conducted by informal traders. Despite acknowledging the economic advantages of utilising opportunities available in allowing border trade between surplus and deficit regions, the government believes that food security considerations dictate that control over national supplies must be maintained.

There is therefore, overt reluctance to conceive of situations where maize can be traded freely, unless systems of holding strategic reserves can be improved so as to remove concerns of food shortages. The role of the FRA has been diffused to the extent that it is not able to carry out its primary functions, as a result, food reserves are never held sufficiently to guarantee the necessary security to persuade the government to allow free trade in maize. Clearly, this is one area that requires further consideration by the government.

The envisaged Crop Marketing Authority (CMA) may provide the required institutional mechanism for improving and stabilising supply and prices of maize. This however, hinges on whether the CMA will be allowed to operate without undue government interference. Only when the CMA is fully established and systems of maintaining strategic reserves put in place, would market forces entirely influence maize trade.
Literature Reviewed

- Preliminary results of the 2000 National census
- Keyser, Gray and Scott, *Zambia’s Agricultural Comparative Advantage*.
- Knepper, 2002 (MSU)
- Ministry of Agriculture and Cooperatives