



Maize Market Assessment and Baseline Study for Kenya

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LIST OF ACRONYMS

CIF	Cost Insurance and Freight
COMESA	Common Market For Eastern And Southern Africa
EAC	East African Community
FAO	Food and Agricultural Organization
FAQ	Fair Average Quality
GMO	Genetically Modified Organisms
GOK	Government of Kenya
IDF	Import Declaration Form
KEBS	Kenya Bureau of Standards
KEPHIS	Kenya Planters Health Inspectorate Services
KG	Kilogrammes
KRA	Kenya Revenue Authority
KSHS	Kenya Shillings
MFN	Most Favoured Nations
MT	Metric Tonnes
NCPB	National Cereals and Produce Board
PIN	Personal Identification Number
PMC	Primary Marketing Centres
PSI	Pre-Shipment Inspection
RATES	Regional Agricultural Trade Enhancement Support
USAID	United States Agency for International Development
US\$	Us Dollars
VCA	Value Chain Analysis
WTO	World Trade Organization

EXECUTIVE SUMMARY

Background

The broad purpose of the study was to carry out a market assessment and baseline survey for Maize in Kenya. This was accomplished through a maize value chain analysis (VCA) aimed at providing a framework for developing strategic actions to enhance the value and/or the volume of maize trade in Kenya.

Specifically, the study aimed at: -

- Generating a maize Value Chain Analysis (VCA) for Kenya
- 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.
- Providing insights on issues and problems, as well as suggesting recommendations that may lead to enhancement of maize trade.

The methodology used for the study involved desk review of recent work in the maize sub-sector, consultations with main stakeholders in the public and private sector and field work that was conducted in the maize surplus producing Districts of the North Rift region and the marginal producing Districts of the South Rift, that included Transmara and Kericho. The field work also covered the major cross border points and markets that included Suam, Lwakhakha, Malaba, Busia, Isebania.

Importance of maize in Kenya

Maize is a major staple food crop in Kenya and is taken as being synonymous to food security. About 90% of Kenya's population depends on it as an income-generating commodity (Nyangito & Nyameino et al 2002). Maize is produced in almost all parts of the country for home consumption while the surplus is marketed to meet the household cash needs. According to the Ministry of Agriculture (MOA), National Cereals and Produce Board (NCPB) and other sources, maize consumption in the country is currently estimated at around 30 million bags per year.

Over the years, maize production has fallen short of the consumption requirements, rendering the country a net importer. This is despite the liberalisation of maize marketing in 1993.

In the last five years, for instance, production deficits have ranged between 2 to 6 million bags (180,000 to 540,000 metric tonnes). In the current season (2002/3), the deficit is projected at 5 million bags or 420,000 metric tonnes.

Regional maize trade

Over the last five years, the deficit has been bridged through unrecorded cross border trade. In addition to the unrecorded trade, the deficit has been met through official cross border and off-shore imports, which over the period 1997 to 2001 amounted to 24.4 million bags (or 2.2 million mt). The principal sources of these imports were South Africa, Zimbabwe, USA and Argentina.

Trade in maize and other agricultural products in general, has been taking place under a repressed system despite pronouncements at the COMESA and EAC level that regional trade has been freed (see EAC 2001). The source of repression has been general inhibitions to the trade, such as lack of market information, differentials in quality standards, Phytosanitary requirements, customs documentation procedures, etc.

The Regional Agricultural Trade Expansion Support (RATES) project funded by the United States Agency for International Development (USAID) seeks to address the above regional maize market access challenges in EAC and COMESA in general. The project is being implemented by Chemonics International, in collaboration with EAC and COMESA.

This study has been commissioned by the RATES project to identify opportunities, issues and constraints facing maize trade in Kenya. The study findings will guide the RATES project in providing timely market information, forging linkages among maize traders in the region and facilitation of policy harmonization within the EAC and COMESA.

Study Findings

Trade flow leaders

The study identified the main participants in the maize value chain as small scale traders; medium/Agents/Lorry Traders; NCPB, other large scale traders and millers.

Production constraints

The following were identified as the main problems affecting maize production in Kenya:

- Low development in technology including high-yielding maize varieties
- High cost of agricultural inputs
- Inadequate credit facilities
- High finance costs
- Lack of support to small-scale farmers
- Post-harvest losses due to lack of adequate and/or poor storage facilities
- Erratic weather
- Land tenure system –encourages sub-division of land
- Weak extension services
- High costs of farm operations – high diesel costs
- Poor status of roads, especially rural roads
- Poor quality of inputs – adulterated seed and fertilizer
- Decline in soil fertility – due to poor farming methods
- Weak farmers' institutions/organisations – results in low prices

Marketing problems

Market liberalization has exposed the maize sub-sector to a number of problems, which include the following:

- Inadequate market information
- Lack of critical mass (economies of scale)
- Lack of on-farm appropriate storage facilities
- Ignorance of market opportunities arising from market liberalisation
- Low producer prices
- Poor infrastructure & insecurity
- Inadequate and unaffordable credit facilities
- Uncompetitive maize prices regionally
- Lack of adequate & reliable market outlets
- Wrong timing of imports (which coincide with harvest season in Kenya)
- Market distortion arising from Food Aid

Policy and regulatory constraints

- Inability of traders to meet customs documentation requirements
- Inaccessibility to phytosanitary import permits
- Rigid and long (time-consuming) official procedures
- Differential quality standards which leads to cross border maize importation difficult
- Loss of profits through currency exchange

Recommendations

Production

Farmers to form strong farmer organisations/groups that will among other things: -

- Pooling together the produce together for marketing
- Lobby for sustainable policies and demand for their rights, such as unadulterated inputs.
- Access private extension services.
- Access credit, marketing information and training on farming as a business

Marketing recommendations

- Assembling of maize for critical mass
 - Producers need to organise themselves into groups through which maize can be pooled together for marketing and receive market information.
 - Traders should also form marketing networks for consolidating maize trading
- Marketing information
 - The government needs to facilitate the supply of a certain minimum of accurate market information.
 - There is need for establishment of a stakeholders and government committee for crop forecast and food balance sheet development
- Seasonality & low pricing
 - Producers and traders need to join in groups as is happening in Uganda in order to consolidate meaningful quantities and seek contracts from large buyers.
- Policy awareness
 - Traders and producers to form strong lobby groups that will lobby for sustainable policies.
- Credit facilitation & reliable market systems
 - Introduction of warehouse receipt financing concept to allow borrowing using maize as collateral.
- Imports & Food Aid.
 - Kenya is an importer of maize, however, the maize sub-sector is very important for this country. There is therefore a need for an efficient information system that indicates the food balance sheet that will enable both farmers and traders to project their business.
 - Food aid should be procured within the region to avoid market distortions
- Regional commodity exchanges
 - There is need to strengthen existing commodity exchanges in the region and facilitate the establishment of such exchanges in countries where they have not been established.

Policy and Regulations

Customs documentation procedures

- The customs department needs to simplify procedures for customs clearance
- Requirement of use of Clearing agents for launching customs documents by small cross border traders should be phased out
- The customs department should introduce the COMESA simplified certificate of origin.
- Pre-shipment inspection requirement for maize coming from COMESA and EAC should be phased out.
- The import declaration form fees needs to be phased out on intra-regional trade **or** waive the minimum IDF fees so that the amount chargeable is the 2.75% of the CIF import value.

Phytosanitary Regulations

- Harmonize Phytosanitary measures with other regional trading partners
- KEPHIS should ensure that import permits are easily accessible to maize traders across the country.

Quality standards

- Harmonization of regional standards and method of testing and enforcement.
- Dissemination of the quality standards to the maize traders

Health standards and radioactive testing

- Port Health Office delegates its role of maize inspection for health standards to KEBS, because of their overlapping roles.
- KEBS and PHO maize standards needs to be harmonized.

1.0 INTRODUCTION

1.1 Preamble

Maize is a major staple food crop in Kenya and is taken as being synonymous to food security. About 90% of Kenya's population depends on it as an income-generating commodity and food. (Nyangito & Nyameino et al 2002). Maize is produced in almost all parts of the country. Out of any year's total production, 15 million bags are retained for home consumption while the balance is marketed to meet the household cash needs. According to Ministry of Agriculture (MOA), National Cereals and Produce Board (NCPB) and other sources, maize consumption in the country is currently estimated at around 30 million bags per year.

Since the liberalization of the maize sub-sector in December 1993, production deficits have continued to be recorded ranging between 2 to 6 million bags (180,000 to 540,000 metric tonnes). In the current season (2002/3), the deficit is projected at 5 million bags or 420,000 metric tonnes. Over the years, the deficit has been bridged through unrecorded cross border trade. For example during the 1997/98 crop season, Uganda declared 643,800 bags (or 58,000 mt) of maize exports to Kenya, while Kenya recorded nil import of maize from Uganda during the same season¹. In addition to the unrecorded trade, the deficit has been met through official cross border trade and off-shore imports, which over the period 1997 to 2001 amounted to 24.4 million bags (or 2.2 million MT). The principal sources of these imports were South Africa, Zimbabwe², USA and Argentina.

According to the *Sessional Paper No. 2 of 1994; on National Food Policy*, the country aims at attaining self-sufficiency in maize production. As evidenced by the growing deficit over the years, this policy seems to have faced limitations. Among the main challenges include weather, cost of production and marketing which have no quick fix. Option for subsidising maize farmers through price fixation at harvest is limited by the fact the NCPB has limited cash for this purpose. For example, in the year 2002, NCPB was forced to dispose maize stocks at a price below what the stock had been purchased.

On the other hand a government reinstatement of the pre-1993 subsidy system, in support of maize farming, would be incompatible with the country's commitments under the COMESA, East Africa Community (EAC) and the World Trade Organization (WTO). These commitments have taken away Kenya parliament's degree of freedom to unilaterally impose import bans or surcharge on maize imports from any of the COMESA or EAC countries and WTO member countries, unless there is sufficient proof that the maize is subsidized. A further limitation to such a move would be an uprising from the Kenya Consumers Organization who would see the policy shift as denying the consumers the economic welfare gains that go along with regional trade integration.

It is therefore a stark reality that efforts to encourage production of maize in the country will take place in an environment open to regionally and internationally sourced maize, despite the concerns of farmers regarding the effects of imported maize on domestic prices. This calls for integrating the regional market in the production equation. Indeed, protectionist tendencies are being phased out as countries join in trading partnerships. Going by the COMESA data for the year 2001, the

¹ In the period 1999 – 2001 Uganda declared 152 metric tones of maize exports to Kenya, while Kenyan records showed only 28,000 metric tones were imported from Uganda.

² Zimbabwe was a major supplier of Kenya maize imports until 1998, when Zimbabwe itself started being a maize deficit region.

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region has a huge market that is currently being serviced from maize imports from outside the COMESA region.

Given the above, it is in the interest of the country to have where maize traded without borders. It will guarantee access to the commodity at relatively low prices as a result of low transaction cost that would be triggered by removal of unnecessary costs associated with regional maize trade (especially when it has to get into the country illegally). If an outward approach to maize production is to be pursued, the country will need the regional market which occasionally suffers maize deficit for export.

Despite pronouncements at the COMESA and EAC levels that regional trade has been freed, trade in maize and other agricultural products in general, has not been freed (see EAC 2001). The studies have pointed out general inhibitions to the trade, such as lack of market information, uniformity in standards, phytosanitary measures, customs documentation procedures, etc.

The Regional Agricultural Trade Expansion Support (RATES) project funded by the United States Agency for International Development (USAID) seeks to address the above regional maize market access challenges through EAC and COMESA. The project is being implemented by Chemonics International, in collaboration with EAC and COMESA.

This study has been commissioned by the RATES project to identify opportunities, issues and constraints facing maize trade in Kenya. 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.

1.2 Purpose and scope of study

The broad purpose of the study is to carry out a market assessment and baseline study for Maize in Kenya. A maize value chain analysis (VCA) develop strategic actions to improve the value and/or the volume of maize marketed in Kenya.

Specifically, the study was aimed at accomplishing the following:

- Generating a maize Value Chain Analysis (VCA) for Kenya
- 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, sales to mention but a few.
- Providing insights on issues and problems, as well as suggesting recommendations that may assist the maize industry to improve on the volume and value of maize.

1.3 Study methodology

In undertaking this study, the following methodology was applied: -

1.3.1 Desk review

Desk review of recent work in the maize sector was conducted ahead of the field work, to familiarize the team with the current issues on maize trade. Secondary data on production, consumption, exports and imports was gathered at this stage. A list of the review documents and studies is attached to this report.

1.3.2 Consultations with government institutions

Consultations with the following government institutions were held to determine the current maize trade policies and regulations: Ministry of Agriculture, Ministry of Finance, Kenya Bureau of Standards, Kenya Plant Health Inspectorate Services, Port Health Office, Kenya Revenue Authority, Ministry of Trade and Industry and National Cereals and Produce Board.

1.3.3 Field work

Field work was carried out in the surplus producing districts of North Rift region (Uasin-Gishu and Trans-Nzoia) and the marginal producing districts of South Rift region (Nakuru, Kericho and Trans-Mara). Uasin-Gishu and Trans-Nzoia districts contributes over 30% of the total national maize production in Kenya. Trans-Nzoia is also the main source of maize consumed in the western lowland areas of Kenya. Kericho and Nakuru were selected because of their proximity to maize consumption areas. The bulk of the maize produced in Kericho is traded in Nyanza that has lately become a maize deficit region. Maize from Nakuru is transported to Nairobi, a chief maize consuming region. Trans-Mara (Kilgoris) was meant to add a mix between the surplus producing regions, the medium producing regions and the consuming regions since bulk of what is produced normally leaves the district and a sizable proportion finds its way into Tanzania.

The following major border points with the neighbouring countries of Uganda and Tanzania (Suam, Lwakhakha, Malaba, Busia and Isebania) were also covered. The following categories of traders were interviewed during the field work:

- Maize farmers (large-, medium- and small-scale)
- Maize traders (large- and small-scale, including cross-border traders)
- National Cereals and Produce Board (NCPB) staff
- Maize Millers

At the border posts a rapid assessment of the volume of formal and informal maize trade was conducted to determine the significance of maize trade flows into and out of Kenya. This activity was done at and around the established crossing points. The sites selected for monitoring were: Suam, Malaba, Lwakhakha, Busia on the Kenya-Uganda border and Isebania on the Kenya-Tanzania border. Unlike Malaba crossing point, the absence of a natural barrier at Busia facilitates smuggling.

The rest of this report is organized as follows; section 2.0 documents the demand and supply situation, highlighting the Kenyan maize balance sheet and the challenges is meeting maize consumption requirements; section 3.0 details the maize value chain encompassing identification of trade flow leaders, transaction costs and value change along the chain and cross border maize trade activities.

2.0 SUPPLY AND DEMAND OF MAIZE

2.1 National maize production and consumption

Kenya is a deficit producer of maize and has, over the years, depended on inflows from the regional and international markets to bridge her production/consumption gap. Recent studies undertaken by FEWSNET and FAO has shown that each adult Kenyan consumes 98kgs (0.09M/tons) of maize annually. Assuming that the proportion of the population that consumes maize and maize products is 90%, the table below gives an indication of the consumption levels since 1996/97 and the resultant surplus/deficit levels.

Table 1: National maize production and consumption

Season	Production (bags)	Production (m/tons)	Consumption (bags)	Consumption (m/tons)	Surplus/Deficit (bags)	Surplus/Deficit (m/tons)
1997/98	24,416,566	2,197,491	26,845,444	2,506,872	-2,428,878	-309,381
1998/99	27,378,898	2,464,101	27,382,352	2,556,195	-3,454	-92,095
1999/00	25,176,814	2,265,913	27,930,000	2,610,261	-2,753,186	-344,348
2000/01	24,830,640	2,234,758	28,488,600	2,656,856	-3,657,960	-422,098
2001/02	30,843,621	2,775,926	29,058,372	2,708,193	1,785,249	67,733

Source: MoA, FEWSNET, NCPB

2.2 Current maize position (2002/2003 cropping season)

Kenya ceased to be self-sufficient in maize production in early 1990's. This problem was exacerbated in 1993 when the maize sub-sector was fully liberalized and the costs of farm-inputs skyrocketed after prices were decontrolled. This discouraged further expansion of maize growing areas.

The National maize stock-position has therefore been on the decline and based on the following maize balance sheet for the current season (2002/03), the country's maize position during the next season (2003/04) will be precarious unless the long-rains performs exceptionally well. It is however important to note that the envisaged shortages during the 2003/04 cropping-season could lead to enhanced maize trade in the region.

Table 2: Maize balance sheet for 2002/2003 cropping season

Description	90-Kg bags	M/tons
Carry over stocks	5,000,000	450,045
Long Rains Harvest	21,000,000	1,890,189
Short Rains Harvest	4,000,000	360,036
Imports (cross border)	500,000	45,004
Imports (Food Aid - WFP)	500,000	45,004
Total	31,000,000	2,790,279
Less Consumption	30,600,000	2,754,257
Projected surplus/deficit	400,000	36,000

Source: MOA & NCPB.

2.3 Maize exports and imports

Kenya does not normally produce surplus maize for export market but in the last five years, we have exported over 1.5 million 90kg bags³ within the region. This is evidenced in the table below where very limited maize was exported in 1997, 1998 and 1999. The National Cereals and Produce Board has been forced to undertake exportation programme twice over the last seven years (1996/97 and 2001/2002) in order to raise funds to pay farmers for their deliveries. On both of these occasions, the exercise resulted in huge losses running to hundreds of millions of Kenya shillings because the maize was disposed off at a price far below what NCPB had procured it for.

Table 3: Kenya maize exports, quantities in Kg and Bags (1997 – 2001)

Year	1997	1998	1999	2000	2001
Kgs	1,007,070	8,313,018	28,382,980	1,896	32,592
90 Kg Bags	11,190	92,367	315,366	21	362

Source: Central Bureau of Statistics

Kenya depends on the regional and international markets to bridge her production/consumption shortfall. The principal sources of maize imports have been South Africa, Zimbabwe, USA, Britain, Italy and Argentina

³ The figure includes 1.1 million bags exported through NCPB in the first half of year 2002

Table 4: Kenya maize imports (quantity in Kg and 90Kg bags)

Source	1997	1998	1999	2000	2001
Africa					
S/Africa	611,579,000	23,805,050	37,864,100	226,764,850	22,200,770
Ethiopia	47,585,000	0	0	0	0
Malawi	0	0	0	10,338,250	20,902,470
Uganda	0	0	11,138,580	1,996,830	15,006,840
Zimbabwe	242,972,740	5,206,670	0	0	2
Mozambique	12,445,650	0	8,050,890	6,625,550	0
Tanzania	30,000	30,000	5,560,500	4,854,010	87,400
Other	5,496,440	0	0	49,000	38,216,580
Total	920,109,410	29,041,720	62,614,070	250,628,490	96,440,620
Rest of the World					
Italy	10,770,000	10,160,000	270,000	68,487,010	105,395,770
U.K	23,500,390	2,000	8,300	9,024,300	500,000
Canada	901,340	4,540	8,900	0	0
Argentina	31,880,470	15,077,600	83,510	0	0
Mexico	0	95,040,700	0	0	0
USA	75,221,950	214,095,300	9,004,210	61,371,500	74,574,060
Other	4,010,000	4,000,000	1,010,100	5,494,041	2,404,487
Total	146,284,150	338,380,140	10,385,020	144,376,850	182,874,310
Grand Total (Kgs)	1,066,393,560	367,421,860	72,999,090	395,005,340	279,314,930
Grand Total (90 Kg Bags)	11,848,817	4,082,465	811,101	4,388,948	3,103,499

Source: Central Bureau of Statistics

2.4 Maize Production & Marketing Calendar

Kenya's maize production patterns and food security situation have unique characteristics. Maize harvesting takes place over a greater period of the year (see table 1 below) especially in the surplus-producing region of North Rift and the deficit producing regions of Central and Eastern Provinces.

This scenario is occasioned by the fact that harvesting takes place over a wide range of agro-ecological conditions. This status has the potential of resulting to a greater food (maize) security concern from widespread national crop failure than in most African countries where production is concentrated in a few areas and harvesting is undertaken within a month or two. The geographic spread of the country's maize production and consumption areas provides ideal conditions and strengthens the case for internal and external trade in maize such as the pattern of maize movement from surplus to deficit producing regions/areas of the country.

Table 5: Maize production and marketing calendar in Kenya

REGIONS	MONTHS											
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
WESTERN		Planting (L/R)								Harvesting (L/R)		
		Harvesting (S/R)							Planting (S/R)			
	Marketing									Marketing		
NORTH RIFT	Harvesting		Planting (L/R)								Harvesting (L/R)	
	Marketing (L/R)										Marketing (L/R)	
SOUTH RIFT		Planting (L/R)					Harvesting (L/R)		Planting (S/R)			
			Harvesting (S/R)				Marketing (L/R)					
			Marketing (S/R)									
NYANZA		Planting (L/R)					Harvesting (L/R)		Planting (S/R)			
		Harvesting (S/R)					Marketing (L/R)					
		Marketing (S/R)										
EASTERN			Planting (L/R)				Harvesting (L/R)			Planting (S/R)		
		Harvesting (S/R)					Marketing (L/R)					
		Marketing (S/R)										
CENTRAL			Planting (L/R)				Harvesting (L/R)			Planting (S/R)		
		Harvesting (S/R)					Marketing (L/R)					
		Marketing (S/R)										
COAST				Planting (L/R)				Harvesting (L/R)				
								Marketing (L/R)				

Source: Ministry of Agriculture

The maize surplus producing areas experience a unimodal rainfall pattern and thus in the maize production calendar, surpluses are normally expected from the end of October of every year. Substantial quantities of maize are also harvested during the period of July – September in the marginal maize producing areas of Western Kenya. This maize coincides with the Uganda maize-harvesting season whose inflow floods the local market leading to depressed prices. In addition to making the local maize non-competitive during this harvesting period, the flow of maize from Uganda continues until early March of the following year. This implies that the marketing of maize from the surplus producing districts of Western and North Rift is distorted by Ugandan maize. The major lean month period is between May and August. Imports during these months may not adversely affect the farmers.

Recent surveys have indicated that the cost of maize production in Uganda is almost half the cost in Kenya. The disparity is brought about by low rate of adaptation of farm inputs by farmers in Uganda, especially fertilizer, and lower input prices. It is also notable that the climate and soils favour yields in Uganda.

2.5 Maize production issues by category

2.5.1 Small scale maize producers

For purposes of this study, small-scale farmers are those who undertake production on an area less than 50 acre. During the survey, twelve small-scale maize producers in the areas of focus were interviewed (Annex 1:A). The interviews were guided by a well-structured questionnaire with both open and closed-ended questions that establish how the small-scale producers go about their production and marketing processes.

The survey established that majority of these farmers (90%) use a labour intensive farming method, much of which is provided by family members. However, those with 30-50 acres hire casual labourers during planting, weeding and harvesting periods.

The survey established that over 85% of the respondents use inputs. However, the same percentage revealed that the application is normally less than the recommended rates which might explain the recorded low productivity of between 12 and 18 bags per acre by small-scale farmers. The survey also revealed that 80% of small-scale farmers sold their maize to rural based traders and lorry traders who were traversing the growing areas during the harvesting season

The table below gives an approximation of an average production cost/bag by the small-scale farmer in Uasin-Gishu and Trans-Nzoia districts.

Table 6: Maize gross margin analysis (GM/Acre) for small-scale producers (for the year 2002/3)

ACTIVITY	UNIT	PRICE/UNIT (US\$)	SCENARIO 1 Yield=14 Bags	SCENARIO 2 Yield=18 Bags
Land Leasing	1 Acre	32.46	32.46	32.46
1 st Ploughing	1 Acre	20.78	20.78	20.78
Seed Maize	10 kg	17.14	14.55	14.55
Fertilizer (DAP)	50kg	14.94	14.94	14.94
Fertilizer (CAN)	50kg	13.25	13.25	13.25
Seeding	1 Acre	10.39	10.39	10.39
1 st Weeding	1 Acre	9.10	9.10	9.10
2 nd Weeding	1 Acre	9.10	9.10	9.10
Stooking	1 Acre	5.10	5.10	5.10
Dehusking	1 Bag (90kg)	0.32	4.48	5.76
Shelling & Bagging	1 Bag (90kg)	0.45	6.30	8.10
On-Farm Handling	1 Bag (90kg)	0.39	5.46	7.02
On-Farm Haulage	1 Bag (90kg)	0.26	3.64	4.68
Transport to Market	1 Bag (90kg)	0.52	7.28	9.36
Cost of Bag (Poly)	1 Piece	0.21	2.94	3.78
Total Farm Activities Cost/Acre			159.77	168.37
Other Incidental Costs (1%)			1.59	1.68
GRAND TOTAL			161.36	170.00
Production Cost/90-kg Bag			11.52	9.45
Production Cost/90-kg Bag in Kshs. (1US\$=Kshs.77)			887.00	728.00

Source: Survey Findings

2.5.2 Medium-scale maize producers

This category of farmers undertakes maize production on an area between 50 and 100 acres. Unlike the small-scale farmers who use a labour intensive farming method, the medium-scale farmers combine both labour and capital intensive farming methods. Ploughing and harrowing of the fields and seeding are entirely mechanised. Most of them use hired machinery for they cannot afford at the level of their operations to procure own machinery. Their production costs are higher than those of large producers with own machinery. Yields achieved are between 19 and 24 90Kg bags.

About 60% of the respondents of this category were found to be having some form of storage facilitate on at the farm and 30% were found to be selling their produce to medium traders and the rest to NCPB and Large traders and millers. Most of these farmers are fairly informed about the market. Transport was noted to be a major component of the marketing costs.

Kenya maize sector value chain analysis

The table below shows the production costs for medium-scale maize farmers for the current crop season Uasin-Gishu and Trans-Nzoia districts.

Table 7: Maize gross margin analysis (GM/Acre) for medium-scale producers (for the year 2002/3)

ACTIVITY	UNIT	PRICE/UNIT (US\$)	SCENARIO 1 Yield=19 Bags	SCENARIO 2 Yield=24 Bags
Land Leasing	1 Acre	25.97	25.97	25.97
1 st Ploughing	1 Acre	20.78	20.78	20.78
2 nd Ploughing	1 Acre	15.58	15.58	15.58
Harrowing	1 Acre	11.69	11.69	11.69
Seed Maize	10 kg	17.14	17.14	17.14
Fertilizer (DAP)	75kg	22.41	22.41	22.41
Fertilizer (CAN)	75kg	19.87	19.87	19.87
Seeding	1 Acre	10.39	10.39	10.39
1 st Weeding	1 Acre	9.10	9.10	9.10
2 nd Weeding	1 Acre	9.10	9.10	9.10
Stooking	1 Acre	5.10	5.10	5.10
Dehusking	1 Bag (90kg)	0.32	6.08	7.68
Shelling & Bagging	1 Bag (90kg)	0.45	8.55	10.80
On-Farm Handling	1 Bag (90kg)	0.39	7.41	9.36
On-Farm Haulage	1 Bag (90kg)	0.25	4.75	6.00
Transport to Market	1 Bag (90kg)	0.78	14.82	18.72
Cost of Bag (Poly)	1 Piece	0.32	6.08	7.68
Dusting (Actellic Dust)	1 Bag (90kg)	0.25	4.75	6.00
Sub-Total			210.47	233.37
Other Incidental Costs (2%)			4.20	4.67
GRAND TOTAL (Production Cost/Acre)			214.67	238.04
Production Cost/90-kg Bag			11.29	9.92
Production Cost/90-kg Bag in Kshs. (1US\$=Kshs.77)			870.00	764.00

Source: Survey Findings

2.5.3 Large-Scale Maize Farmers/Producers

Farmers who operate on land in excess of 100 acre are the major surplus producers of maize in Kenya and account for over 30% of the total maize production in Kenya. Large-scale farmers use capital intensive farming method, operate purely on a commercial (profit-oriented) basis, and employ high technology inputs (machinery and agro-chemicals).

Many large-scale farmers own machinery for farm operations ranging from land ploughs/tillers to maize shellers. Due to their mechanised nature of operation, large-scale farmers require a large capital outlay to undertake their operations. Their ability to offer collateral enables them to access formal credit from financial institutions for maize production.

Unlike the small-scale and medium-scale farmers who are engaged in other enterprises, large-scale farmers concentrate on maize farming and dedicate all their efforts towards this enterprise. Indeed, this explains why the majority of them (80% of those interviewed) realised yields of between 25 and 30 bags per acre during the current crop season.

The large-scale farmers own on-farm storage facilities, some with capacities in excess of 10,000 bags (900 metric tons). These farmers are generally well of financially and are never in a hurry to dispose of their produce. At the time of the survey, 30% of those interviewed were still holding onto their maize for price-speculation purposes, 42% had sold to NCPB at Kshs.950 per bag (US\$137.10/MT) while 28% had sold to millers at prices ranging between Kshs.900 (US\$129.85/MT) and Kshs.1050 (US\$151.50/MT). Transport costs ranged between Kshs.50 (US\$0.6) and Kshs.120 (US\$1.55) depending on the distance from the market outlet although it was hard to ascertain the transport cost/bag by those who own transport means (lorries and tractors).

The table below gives a chronology of the various costs incurred by the large-scale farmers during the current crop season in Trans Nzoia and Uasin-Gishu Districts. It is important to note that while majority of farmers under this category own most of the farm machinery, hiring rates has been used for consistency purposes with small- and medium-scale farmers.

Table 8: Maize gross margin analysis (GM/Acre) for large-scale producers (for the year 2002/3)

ACTIVITY	UNIT	PRICE/UNIT (US\$)	SCENARIO 1 Yield=25 Bags	SCENARIO 2 Yield=30 Bags
Land Leasing	1 Acre	25.97	25.97	25.97
1 st Ploughing	1 Acre	20.78	20.78	20.78
2 nd Ploughing	1 Acre	15.58	15.58	15.58
Harrowing	1 Acre	11.69	11.69	11.69
Seed Maize	10kg	17.14	17.14	17.14
Fertilizer (DAP)	75kg	20.46	20.46	20.46
Fertilizer (CAN)	100kg	26.49	26.49	26.49
Seeding	1 Acre	10.39	10.39	10.39
Herbicides	1 Acre	12.99	12.99	12.99
Stooking	1 Acre	5.10	5.10	5.10
Dehusking	1 Bag (90kg)	0.32	8.00	9.60
Shelling & Bagging	1 Bag (90kg)	0.45	11.25	13.50
On-Farm Handling	1 Bag (90kg)	0.39	9.75	11.70
On-Farm Haulage	1 Bag (90kg)	0.25	6.25	7.50
Transport to Market	1 Bag (90kg)	0.65	16.25	19.50
Cost of Bag (Poly)	1 Piece	0.32	8.00	9.60
Dusting (Actellic Dust)	1 Acre	0.25	6.25	7.50
Sub-Total			232.34	245.49
Incidental & Financial Costs (5%)			11.62	12.27
GRAND TOTAL (Production Cost/Acre)			243.96	257.76
Production Cost/90-kg Bag			9.76	8.59
Production Cost/90-kg Bag in Kshs. (1US\$=Kshs.77)			752.00	661.00

Source: Survey Findings

2.6 Producer and selling maize prices

Before liberalization, the maize producer price was regulated and applied on a standardized, pan-territorial and pan-seasonal basis. Official prices for maize was gazetted as it moved through the maize supply chain from farm to NCPB to mill and finally to the consumer over the course of the crop calendar year. It was based on the cost of production and a mark-up in relation to local production and from 1981 to 1992, on world market parity prices. After liberalization, the main question of what is the “right producer price” for maize per bag has preoccupied development agencies, government officials and traders. However, in a liberalized era, the “right price” is normally discovered by market forces of demand and supply in a free market situation and fair play.

Kenya maize sector value chain analysis

The table below gives the average national producer and selling prices of locally produced maize for the period after the advent of liberalization. It provides a chronology of the various costs incurred by large-scale farmers during the current crop season in Trans Nzoia and Uasin-Gishu Districts. It is important to note that while majority of farmers under this category own most of the farm machinery, hiring rates has been used for consistency purposes with small- and medium-scale farmers.

Table 9: Maize producer and selling prices

Crop season	Producer price (kshs./bag)	Producer price (us\$/m/ton)	Selling price (kshs./bag)	Selling price (us\$/m/ton)
1996/97	1127.00	227.57	1099.00	221.92
1997/98	1162.00	205.96	1318.00	233.61
1998/99	1009.00	181.07	1208.00	216.78
1999/00	1200.00	175.59	1436.00	210.12
2000/01	1250.00	177.12	1300.00	184.20
2001/02	1000.00	141.33	1250.00	176.66

Source: NCPB

2.7 Major production constraints

The following were identified as being the main problems affecting maize production in Kenya:

- Low development in technology including high-yielding maize varieties
- High cost of agricultural inputs
- Inadequate credit facilities
- High finance costs
- Lack of support to small-scale farmers
- Post-harvest losses due to lack of adequate and/or poor storage facilities
- Erratic weather
- Land tenure system –encourages sub-division of land
- Weak extension services
- High costs of farm operations – high diesel costs
- Poor status of roads, especially rural roads
- Poor quality of inputs – adulterated seed and fertilizer
- Decline in soil fertility – due to poor farming methods
- Weak farmers’ institutions/organisations – results in low prices

2.8 Recommendations

Farmers to form strong farmer organisations/groups that will assist them to:

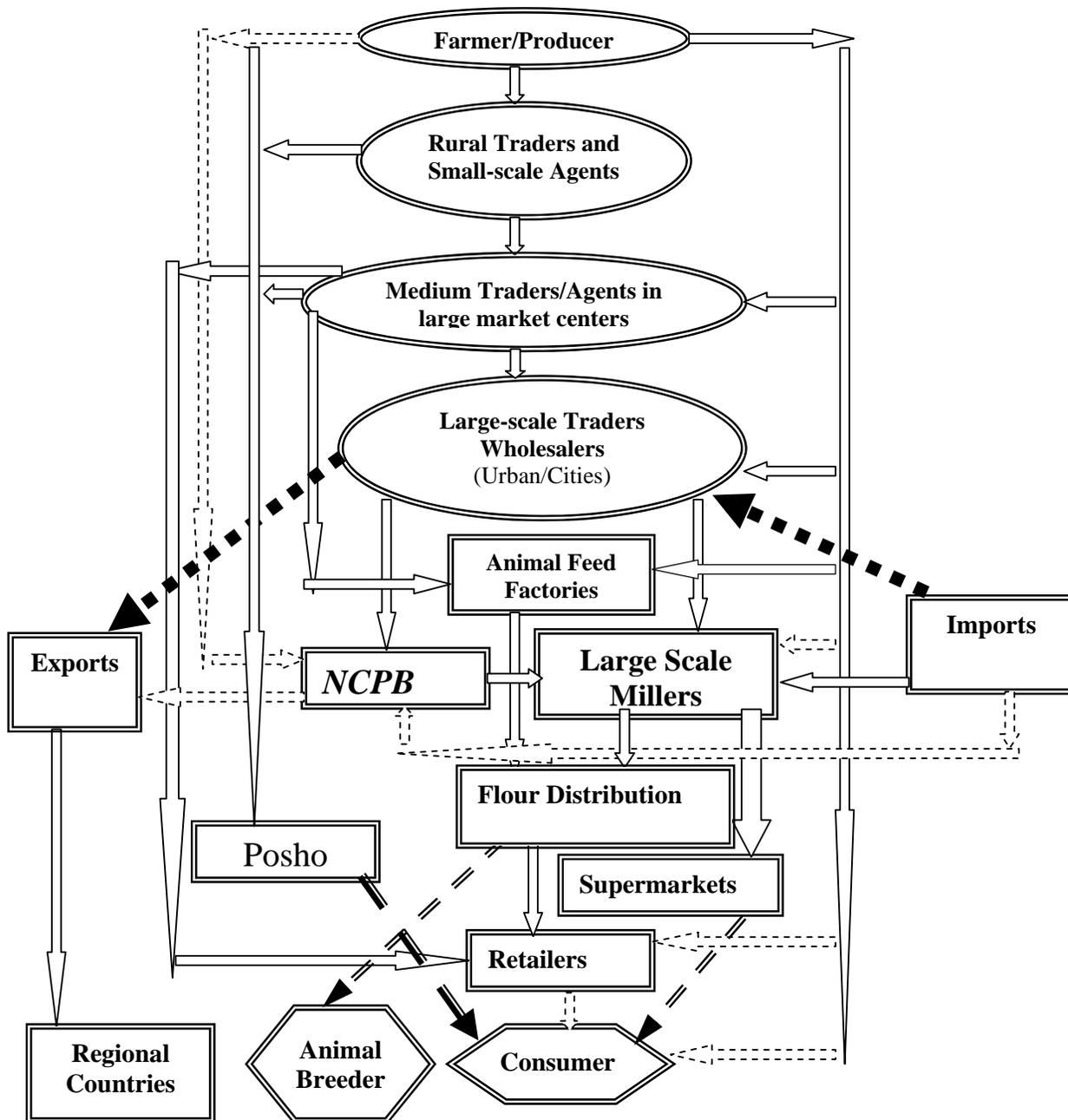
- Pool produce together for marketing
- Lobby for sustainable policies and demand for their rights.
- Access private extension services.
- Access credit, access marketing information and access training on farming as a business

3.0 VALUE CHAIN ANALYSIS

3.1 Maize value chain channels

Under the new, liberalized market system, there are many different ways in which maize reaches the consumer. These “marketing channels” vary depending on the country and location. Figure 1 below illustrates the main maize marketing channels in Kenya.

Fig.1: Maize marketing chain/flow



Legend:

Oval – Main Players

Rectangular – Market Outlets

Hexagon – Final Consumer + Products

3.2 Overview of the value chain

The maize to flour supply chain was analysed to understand how the various participants have behaved under the liberalized market era. The maize to flour supply chain involves the horizontal linkages of processes and value adding activities among private sector firms right from farm level production to processing plant and beyond to retail distribution outlets. Supply chains are commercial conduits through which four essential flows take place.

- i. Information
- ii. Cash and Credit
- iii. Product and
- iv. Ownership right and contingent ownership claims

When supply chains are well aligned, information flow becomes efficient among participants causing a healthy competition in the entire chain. It is therefore necessary to understand all the participants and stakeholders and their roles in the supply chain to offer remedies to constraints that may be impeding the smooth flow of the chain.

As shown on the diagram above the maize to flour supply chain involves four most critical value adding links and participants;

- i. Farm-level maize producers (farmers),
- ii. Primary and secondary maize traders and millers,
- iii. Distributors; and
- iv. Consumers.

The survey analysed each critical link and participant for value adding roles, strengths, weaknesses, constraints, threats and opportunities to improve on the supply chain. The findings on each participant are summarised here below.

There are several factors that influence the way in which maize marketing is carried out:

- i. Time of the year;
- ii. Location and transport facilities;
- iii. Availability of market places;
- iv. Size of the harvest;
- v. Size of the harvest in neighbouring countries.

3.3 Maize traders along the value chain

During the survey, thirty six (36) traders operating both on a small-scale (handling up to 100 X 90-kg bags per day) and large-scale (handling over 100 X 90-kg bags) were interviewed on issues and constraints pertaining to their enterprises. The findings of the survey are as enumerated hereunder.

3.3.1 Small-Scale Maize Traders

This category of traders is composed of maize retailers, most of whom are women and operate in designated market centres in the rural areas. They receive their supplies in small quantities from small-scale farmers as well as bicycle and donkey traders who link the market in very remote areas. Such traders operate strictly on cash basis and rarely incur transport costs since farmers usually deliver maize to them. Nevertheless, they are required to pay Kshs.20/day to the council as service charge.

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Maize trading is often combined with another businesses and traders are not very strict on quality. Their market outlet is mainly to medium traders or for local consumption. They often lack market information since their trade is restricted to their locality and are, in most cases, price takers. Their purchases are small and depend mainly on turnover. During the peak periods they purchase less than 100 bags per day. Higher trade margins are normally achieved during off-season periods when they experience higher demand.

3.3.2 Medium/Agents/Lorry Traders

This category of maize trader was found to be seasoned traders who operate in the major producing districts and border points. They are endowed with slightly higher financial resources than the small-scale traders and most of them own canters, semi-trucks or full trucks for maize movements. They also own, rent or put up temporary stores in the major producing regions or border points. Their main source of maize is from small and medium farmers as well as from small-scale traders.

This category of trader seeks market information, enter into supply contracts with millers and other institutions and sometimes sell to NCPB. Because they possess storage facilities they are in a position to speculate. Their optimum purchase is up-to 300 bags a day during the peak periods. Like the small-scale farmers their profits are higher during the off-season and often pay cash to their clients.

c) NCPB & other large-scale maize traders

Prior to full liberalization of the grain market in Kenya in December 1993, the maize market was government-controlled. Maize farmers had an assured market outlet at pre-determined producer prices that was all handled through NCPB. Liberalization of the maize market meant that farmers were free to make decisions on matters pertaining to marketing of their produce. After liberalization NCPB lost its monopoly of the formal cereals marketing system in Kenya and its market share has since declined drastically.

However NCPB is still a major player buying over a million bags (90,000 MT) per year. Other major traders include Export Trading and Pisu Ltd. Most of these traders, own, or rent, storage facilities in major producing areas and at the border points in addition to renting space from NCPB.

Traders in this category are endowed with relatively more financial resources than the two previous categories. NCPB and other large-scale traders mainly procure their maize from large and medium scale farmers and traders on set quality parameters and pay by bank cheque. For this reason, small-scale farmers and traders find it difficult to sell to this category of buyers. However, these traders pay slightly more than others thus benefiting the large farmers and traders.

Table 10: Local maize purchases by NCPB

Year	Purchases (90 Kg Bag)	Price per bag (KShs)	Purchases (m/tons)	Price per m/ton
1996	1,108,568	659	99,781.10	133
1997	690,892	1,162	62,186.50	206
1998	1,666,387	1,221	149,989.83	219
1999	383,751	1,077	34,541.04	164
2000	1,948,660	1,288	175,396.94	188
2001	2,072,007	1,275	186,499.28	181
2002	1,017,433	1,043	91,578.13	147

Source: NCPB

3.3.4 Maize millers

Milling is the main component in value adding to maize, the main staple diet for most Kenyans. There are three types of millers serving the maize industry; the hammer/posho miller and sifted maize miller. Maize milling industry is divided into three milling categories namely;

- (i) Large scale sifted maize millers
- (ii) Small scale granulated maize millers; and
- (iii) Hammer/posho millers (whole meal maize millers)

Large scale sifted maize millers include Unga Ltd, Mombasa Maize Millers, Pembe Flour Mills, United Millers Ltd., Kenya Milling Co.Ltd located in Eldoret, Kitui millers, TSS, Premier, Swan and Kabansora. Although it was not possible to establish their exact number, posho mills play an important function in the maize chain with every market centre having more than one. Simba Posho Mills, located in Eldoret, is the main granulated maize millers in the area of study and plays a pivotal role in the maize chain.

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The general characteristics of the maize mills are as shown in the table below.

Table 11: General characteristics of millers

Characteristic	Large-scale sifted maize miller	Small-scale granulated maize miller	Hammer/posho miller
Capacity (tons/month)	900 – 10,800	270 – 1,800	<100
No. Of Employees	>20	4 – 10	3 – 5
Main Products	Sifted maize meal	Partially de-germed maize meal	Whole meal
Extraction Rate	74 – 84%	65 – 70%	99%
By Products	Germ, bran & waste	Mixed germ	None
Storage Capacity	One month's stock	2 – 6 days stock	None
Source of Maize	<ul style="list-style-type: none"> • Farmers • Private traders • NCPB • Imports 	<ul style="list-style-type: none"> • Farmers • Private traders 	Service providers
Shelf-life of Products	2 years	1 – 2 years	2 – 5 months
Mills For:	Urban consumers	Institutions & traders	Individuals & institutions
Type of Mill Technology	Roller	Huller	Hammer

Source: Survey Findings

The table below gives the percentage volumes of trade handled by the various players in the maize marketing chain during the current cropping season.

Table 12: Percentage maize trade volumes by key players

Market players	Percentage traded
Small-Scale Traders	15%
Large-Scale Traders: NCPB	25%
Others	10%
Medium/Agents/Lorry Traders	40%
Millers	10%

Source: Survey Findings

3.4 Marketing transaction costs

There are a number of transaction costs incurred by the maize marketing channel participants at each stage of the value chain. Normally, these costs are high during the off-season and low during on-season. The table below gives the indicative transaction costs at each stage of the maize value chain.

Table 13: Indicative transaction costs by season

Transaction channel	Dry maize transaction cost (Kshs./90-kg Bag)	
	On-season	Off-season
Farm gate to rural trader	5 -10	15 – 20
Rural trader to urban traders/Agents	30 - 40	50 –60
Urban trader (Assembler) to wholesaler (Large-scale trader) including millers and NCPB	60 - 80	90- 120
Total Transaction Costs	95 – 110	155 – 200
Total Transaction costs (US\$)	1.25 – 1.44	2.04 – 2.63

Source: Survey Findings

From the table, it can be deduced that transaction costs largely depend on the number and concentration of participants in an operational area and the distances between the players. The condition of the road network in each operation area also has a direct impact on the costs.

3.5 Value added along the chain

Arising from the factors influencing the marketing of maize enumerated above, the value added along the various marketing channels changes from farm gate to final consumer. They are especially influenced by the time of the season and the levels of stock holding by various participants in the maize chain. The table below shows the indicative maize buying and selling prices along the value chain during on-season and off-season periods as well as the percentage changes.

Table 14: Value change along the maize chain (Kshs/90-kg Bag)

Transaction point	Farm gate/buying prices		Selling prices		Percentage value added	Percentage value added
	On-season	Off-season	On-season	Off-season	On -season	Off-season
Farmer	700	1000	900	1300	28%	30%
Small Traders (Cyclists)	750	1000	900	1400	20%	40%
Urban Traders (Assemblers)	850	1050	950	1200	12%	14%
Wholesalers (Large-Scale Traders)/NCPB	950	950	1050	1250	10%	31%
Millers	900	1200	1100	1400	22%	17%

Source: Computed by Consultant

3.6 Cross-border maize trading

Kenya, Uganda and Tanzania are important trading partners but formal trade linkages have been constrained by a myriad of factors that have spurred the growth of informal (unrecorded) trade. Despite trade promotion protocols and market reforms, which to a large extent have eased commodity movement restrictions, bureaucratic import/export procedures still inhibit formal trade between the three countries. In addition, inappropriate policy interventions in the commodity markets tend to distort relative prices thus encouraging informal cross-border trade.

Interest in cross-border trade has been overwhelming but inadequate knowledge of its magnitude, determinants and consequences, not only leads to under valuation of figures in the national accounts but also inhibits formulation of appropriate policies and strategies to exploit its potential impact particularly on food security.

3.6.1 Busia

Like Malaba, Busia is a very busy trading centre where infrastructural facilities including roads, telecommunications, power lines and supporting institutions like banks, are well developed on both sides of the boarder. The most noticeable trade around Busia revolves around cereals and legumes; with beans, maize, millet and groundnuts finding their way into Kenya.

Although the level of trade in maize was relatively low at the time of the survey, it was observed that the flow of maize from Uganda to Kenya was continuous all year round.

The customs documentation requirements for commercially traded goods, as is explained in section 4.0, are beyond the reach of the cross border maize traders. Most of them do not have PIN numbers which are mandatory entry requirements in form C63. For those who have the PIN number, requirements that such documents be lodged by clearing agents presents an unnecessary cost which should be avoided to safeguard narrow profit margins. Traders have gone around these official trading requirements by buying bulk in Uganda, transporting the maize up to “no-mans land” and then employing services of cyclists to ferry maize across the border. (see the photograph below, which was taken on 21st March 2003 at the Busia Border, Kenya).

Kenya maize sector value chain analysis





The cost of ferrying each bag of maize from Uganda to Kenya was KShs10. The maize is accumulated to lorry loads in a matter of hours. The destination of the above cyclist is given in the next picture where maize is dumped to be loaded to the lorry.

The customs officials, in realizing the handicap that official trading requirements have posed to cross border trade, are using a direct assessment method which allows them to clear goods without having to insist on all the papers. This method of assessment is only used for a few bags of maize. Traders break their bulk into five to ten bags and then approach customs for clearance, which is granted. The tariff applied is the COMESA rate of 4%, and an IDF fees of 2.75% of the cost of the maize. Given that maize traders do not have invoices, customs uses Uganda local price level, adjusting to determine the dutiable value of the maize.

Other than the cross border traders, as described above, we identified only two large-scale traders in Busia with storage facilities capacities of 8000 90-kg bags and 15,000 90-kg bags. The rest of the traders were operating in the open-air markets and would leave their commodities (maize) in the open at the close of the business.

3.6.2 Malaba and Lwakhakha

Malaba is the busiest border post between Kenya and Uganda in terms of volume of grain trade. Lwakhakha border point is less active but forms an integral part in grain trade, especially illegal trade between the two countries.

During the study, the cross-border maize trade between the two countries was at its lowest ebb. This was because of low maize stock holding on either side as the maize growing areas on either side had already concluded their harvesting. There was however a small-scale retail business being undertaken along the “no-mans-land” for the Ugandan maize with daily volume of trade for each of the interviewees being in the region of ten (10) 100-kg bags.

The retail traders, majority of whom were women bought maize from Ugandan traders across the border at Kshs.1000 per 100-kg bag. The maize is later sold to final consumers from the Kenyan side in small quantities (2 kg tins) at between Kshs.25/2-kg tin and Kshs.26/2-kg tin), which translates to between Kshs.990/90-kg bag and Kshs.1030/90-kg bag). The retail traders were using bicycles to transport maize from Uganda to their area of operation at a cost of Kshs.10 for a 100-kg bag.

There was also a thriving business in maize involving bicycle traders. These traders, mostly Ugandan, would go into the interior parts of Uganda, buy the maize allegedly at Kshs.800 per 100-kg bag (Kshs.720/90-kg bag), transport it across the border (without paying duty) and sell it to Kenyan traders (stationed on the Kenyan side) at Kshs.900/100-kg bag (Kshs.810/90-kg bag). The Kenyan traders would later sell this maize between Kshs.1000/90-kg bag and Kshs.1050/90-kg bag (either wholly or in small quantities) to other small-scale retailers operating at the local market places. Some of the traders who own means of transport (lorry, canter or pick-up) were also taking maize to some parts of Nyanza province (Siaya, Homabay, Kendubay etc) which are currently facing maize shortages and were allegedly selling this maize at between Kshs.1100 and Kshs.1200 per 90-kg bag.

Discussions with the various government officials (customs and excise) and traders during the baseline survey confirmed the existence of widespread unofficial trade in maize. Many traders reportedly engage in informal trade because the official procedures are too rigid, too long and overly bureaucratic, thus increasing the overhead costs.

3.6.3 Isebania

Isebania is the major exit/entry point on the Kenya-Tanzania border. Agricultural commodities traded across the border include rice from Tanzania and maize from Kenya. In the past, barter trade reportedly flourished along the border where 100 kilograms of rice would be exchange for 180 kilograms of maize.

Traders operating along and across the border point are highly experienced in maize trade. Majority of these traders have operated for over a decade and have sweet memories on how maize trade was profitable during the pre-liberalization era.

The situation at the moment is such that there are maize shortages in Kenya (Nyanza Province) and in Tanzania. The traders interviewed conceded that they were mopping and piling up maize with the aim of cashing in on the shortages, expected to worsen by May 2003.

Traders own storage facilities with capacities of up to 5,000 90-kg bags and enough capital outlay to procure these quantities. Two traders have opened buying centres in the surplus producing areas of Kuria district (Kehancha and Ntimaru) where they are paying a commission of Kshs.20/bag. The personnel operating at these buying centres are given cash to operate with and well known to the traders.

The procurement price of maize in Isebania by during the peak-harvesting period (November/December/January) was Kshs.900/90-kg bag. At the time of the survey, the price had increased to Kshs.1050/90-kg bag. Maize intake is still continuing although at a reduced rate occasioned by reduced stockholding at the farm level.

Despite the fact that the traders are hoarding maize for speculation purposes, they are releasing some quantities to final consumers and other small-scale traders at Kshs.1100/90-kg bag. They are

Kenya maize sector value chain analysis

also taking maize to South Nyanza (Kendu Bay, Homa Bay, Muhuru Bay) and selling at Kshs.1250/90-kg bag to consumers and other retail traders who normally procure between one (1) and ten (10) bags depending on their financial positions.

4.0 TRADE POLICY AND REGULATORY ENVIRONMENT

4.1 Regional integration and multilateral trading system

Kenya's commitment under the COMESA, EAC and the WTO has a direct bearing on the trade policy which the country may pursue in promoting trade or production of any given commodity. These commitments are enshrined in protocols that limit the country from making unilateral policy decisions.

Under the COMESA Free Trade Area (FTA) protocol, maize imports (as in deed imports of other commodities) from Malawi, Zambia, Zimbabwe, Egypt, Djibouti, Madagascar, Mauritius and Sudan to enter Kenyan market duty free. Kenyan maize exports to these countries would also be granted duty free status, provided they are accompanied by certificate of origin. For other non FTA countries, Kenya is bound by the COMESA trade protocol to offer rebate on normal duty for imports from the countries below as follows: -

- **Comoros, Eritrea and Uganda** - 80% reduction
- **DR Congo** - 70% reduction
- **Burundi and Rwanda** - 60% reduction
- **Ethiopia** - 10% reduction

Imposition of duty or any other discriminatory taxes would have to be sanctioned under the COMESA safeguards clause. This policy stance only applies to Kenya and all other COMESA countries.

Under the EAC trade regime, Kenya grants market access to commodities coming from Uganda and Tanzania a 90% tax reduction on the normal tariff. No other charge is allowable, without being sanctioned by the appropriate organs in the EAC. As a results maize from the region is supposed to enter the Kenyan market at 3%.

4.2 Marketing policy

The marketing of maize has been tightly controlled since the colonial days. Originally, the controls were intended to provide direct economic support to European settlers. After independence, the main reason for the controls was to stabilize producer and consumer prices and to ensure food security in the country.

The controls were based on a strict regulation of private trade in maize and direct government participation in the market through various state regulatory boards which are now consolidated into the National Cereals and Produce Board (NCPB).

The controls did not fully succeed in stabilizing producer prices for maize and creating incentives for increased maize production. Instead they may to have caused in poor regional and seasonal market integration and instability in market conditions.

These shortcomings triggered reforms in the maize marketing system in 1986. The reforms entailed gradual transition from the government-controlled single marketing channel to a multi-channel marketing system consisting of both government and private agents. Restriction on maize movement was gradually removed from one bag in 1986 to limitless amount in 1993. Full

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liberalization of the maize sub-sector was attained in 1996, when the requirement for import and export licenses⁴, was removed in 1996 under the program for liberalization of the cereal trade.

A key maize marketing policy issues even after liberalization, has been the application of suspended duty to regulate maize imports in seasons when surplus arising from bumper harvest was projected. In 1994 for instance, the government introduced a suspended duty following substantial maize imports by the private sector which were blamed on slump in maize prices. As evidenced in the table below for most of the subsequent years, application of the suspended duty has been limited. Over the period 1998 to 2000, suspended duty was enforced only once in 1998.

Table 15: Imposition and removal of import duty on maize

Date	Placement	Normal duty	Suspended duty	Total duty applicable
10 th Sept.1998	Kenya Gazette Supplement No.51	32.5%	Nil	32.5%
6 th Nov.1998	Kenya Gazette Supplement No.62	25%	50%	75%
26 th Jul.1999	Kenya Gazette Supplement No.40	25%	Nil	25%
13 th Jun.2000	Kenya Gazette Supplement No.38	Zero-Rated	Zero-Rated	Zero-Rated
21 st Jun.2000	Legal Notice No.80	25%	Nil	25%

Source: Kenya Gazette Supplements & Legal Notices

Application of suspended duty has now been phased out. According to the Ministry of Finance and Ministry of Agriculture, other than import tariff, no any other non tariff charges will be applied as a tool for regulating maize imports. This policy stance is validated by the non application of suspended duty in year 2001/02 season when a surplus of 68000 MT was recorded.

The other source of concern has been market distortion by NCPB through price fixation way above the dictates of the market. At this price, NCPB, due to cash flow limitation is only able to buy a fraction the maize from the farmers. This distortion discourages investments in the maize marketing. Regional exporters of maize to Kenya, such as Ugandan suppliers, view this behavior as a deliberate move to frustrate usually less costly imports from neighbouring countries.

4.3 Customs requirements

4.3.1 Entry of exports & imports in form C63.

This form discriminates against small and medium enterprises and individuals, who may not have been registered for income tax. Interviews at the border posts showed a case of small traders who are unwilling to engage in maize trade formally because of this requirement.

4.3.2 Mandatory services of Clearing Agents

To clear goods imported for commercial purposes, customs regulations require that an importer uses a clearing agent, or if clearance is by self, that a clearance license be obtained from customs department. According to the interviews held at the border post with the customs officials, traders and clearing agents, this requirement is a disadvantage to small and medium traders because the

⁴ Maize exports and imports licenses were until 1996 being issued by the Ministry of Agriculture.

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associated costs seem to erode their profit margins significantly. Charges by clearing agents range between 1.5% and 2% of cif.

4.3.3 Other requirements for maize imports

- Import Declaration Form
- Original Invoice
- Pre-Shipment Inspection
- Certificate of origin for goods to qualify for COMESA tariff
- KEPHIS Import permit
- KEBS Standards certificate
- PHO Health certificate

An evaluation of the impact of these requirements on maize trade indicated that they are an impediment to intra-regional trade. A detailed analysis of these requirements, their effects on maize trade and what the business community and policy implementing institutions had to say about them, is presented below.

i) **Import Declaration Form (IDF)**

According to Kenya Subsidiary Legislation 2001, all imports are required to be entered in the Import Declaration Form (Form C61). Thus maize imports, like all other imports, are subjected to this regulation. An IDF fees of 2.75% is levied on all imports. An advance of KShs5000 is paid when making the declaration for imports. The balance is paid when clearing the goods. Small traders are severely disadvantaged by this requirement because in most cases, the IDF fee due using the 2.75% formula is much lower than the KShs5000 that they will have paid when lodging the application. The difference is not refundable!

The importers recommended waiver of IDF fees on imported maize and other agricultural produce in general. Alternatively, the Government should do away with the minimum IDF requirement so that the amount chargeable is the 2.75% of the CIF import value. The business community also recommended that if the 2.75% is to be retained, efforts be made to harmonize it with the Kenyan trading partners in the EAC and COMESA.

ii) **Pre-shipment Inspection (PSI)**

Pre-shipment inspection (PSI) involves verification of the quality, quantity, price (including currency exchange rate and financial terms) and the customs classification of goods to be exported. Such inspections assure importers that the goods they have ordered meet contractual specifications and quality standards, thereby reducing possibilities for disputes after the goods arrive in Kenya.

The principal aim of applying PSI services in Kenya by the Customs Department is to ensure against loss of customs revenue as a result of under-invoiced imports. These inspections also prevent the imports of products that are considered harmful to health and therefore cannot be sold (e.g. banned chemicals and pharmaceutical products, substandard food products) in the exporting country.

The Kenya Subsidiary Legislation, 2001 has outlined the products to be subjected to pre-shipment inspection as follows:

Goods to be subjected to PSI irrespective of value

- Used motor vehicles (other than duty free);
- Used tyres;
- Refrigerators, refrigeration equipment and air conditioners;
- Worn or used clothing and footwear;
- Medicaments for human or veterinary use;
- Fertilizers;
- Any goods that the Commissioner may require to be inspected.

All goods with an f.o.b value exceeding US\$5,000

For all imports with an f.o.b value exceeding US\$5,000, Pre-shipment Inspection is required. Maize is one of the commodities subjected to PSI if its f.o.b value is within the above bracket. For regional trade, the Pre-shipment Inspections are done by COTECNA.

Given the purpose for Pre-shipment Inspection, as explained above, regional maize trade need not be subjected to PSI because the trade is zero rated (for COMESA countries which have effected the FTA) or the tariff applicable is negligible because of the low COMESA preferential tariffs which Kenya offers other COMESA non-FTA countries and EAC. It is therefore recommended that this requirement be dropped for all regionally sourced maize.

iii) Import tariff and non-tariff charges

Over the years, the government has used tariff and non-tariff charges to regulate maize imports. As evidenced in the table below, suspended duty was applied once in 1998, principally because of a maize surplus of 29,000 MT in the 1996/97 season.

According to the Finance Act 2002, currently maize imports from non COMESA and EAC countries attract an import duty of 25%.

Maize imports from COMESA and EAC attract a duty of 3%, provided that such imports are accompanied by a certificate of origin issued by a designated authority from the country of origin. For small and medium traders, this preferential regional duty is not attainable because issuance of the certificates of origin in the source countries takes place in capital cities or district head quarters. The transaction cost (transport, time taken etc.) of getting the certificate is prohibitive.

In Kenya, issuance of the certificates takes place in five designated stations within the Ministry of Trade and Industry⁵ as follows: Nairobi, Nakuru, Kisumu, Eldoret and Mombasa.

4.4 Trade regulations and procedures

4.4.1 Phytosanitary measures

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

⁵ The Kenya Revenue Authority is in the process of taking over the issuance of the Certificates of Origin. This shift in administration of the issuance of the certificates is expected to ease the problem for exporters.

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- That a Phytosanitary Certificate accompany maize imports
- The following additional declaration be stated in the Phytosanitary Certificate: -
 - ⇒ *Sclerospora graminicola* (sace) Schroet and *Sclerospora sacchard miy* are not known to occur in the country of origin
 - ⇒ *Xanthomonas stewartii* (EF Smith) Dawson is not known to occur in the place of production
 - ⇒ The maize was fumigated before dispatch (details to be stated in the Phytosanitary certificate)
 - ⇒ The material is not genetically modified

When applying for a phytosanitary import permit, a fee of Kshs.500 is payable. Although KEPHIS has made efforts to make the application process easier for traders there are complaints about the limited geographic issuance points. The transaction costs in terms of transport to these few points and time taken, is viewed as prohibitive by traders.

KEPHIS is requested to provide information on its permit issuance points, and as much as possible have these points close to the business community.

4.4.2 Quality standards

It is a requirement that maize imports and exports, like all other commodities, meet Kenya Quality Standards. The standards for maize exports have the following quality specifications. Maize inspection for quality standards is done at the port of entry and maize is released immediately. No fee is charged for these services.

Table 16: Maize quality specifications

Factors	Maximum level
Moisture Content	13.5%
Foreign Matter	1.0%
Broken Grains	2.0%
Insect Damaged Grains	3.0%
Rotten, Diseased and Discoloured Grains	4.0%
Other Colored Grains	2.0%
Free from Live Insect Infestation	-
Aflatoxin	Nil (10ppb)

Source: Kenya Bureau of Standards

The only concern raised by the traders is that the standards are not known before hand. Further, the port health office seems to be inspecting maize for the same purpose as Kenya Bureau of Statistics.

4.4.3 Health Standards

Interviews with the Port Health Office indicated that maize is subjected to inspection for ensuring that it meets prescribed food safety standards, which include a moisture content of 12.5%, aflatoxin level of 10ppb and testing for radioactive material. Except for the moisture content which is much lower than that prescribed by KEBS, the other standards are similar to KEBS.

Services for testing health standards are free, except the radioactive test (when necessary) is done at KShs3000 per consignment.

5.0 SUMMARY OF CONSTRAINTS

5.1 Marketing problems

Market liberalization has exposed the maize sub-sector to a number of problems, which include the following:

5.1.1 Inadequate market information

Farmers are faced with the problem of lack of market information on market options and prices. The fact that timely gathering, analysis and dissemination of such information is expensive discourages the private sector involvement. The inability of the GOK to provide this information has propagated an imperfect maize market.

5.1.2 Lack of critical mass (economies of scale)

The maize marketing chain is longer than necessary because a majority of farmers are small and depend on maize as a cash crop. Their marketable harvests are therefore sold immediately to a number of small traders who assemble the quantity in lots of 10 to 100 bags before selling them to other medium traders

5.1.3 Seasonality related problems

Maize farmers in the main growing regions of the North Rift and Western Kenya usually harvest maize within November and February. Because maize is a cash crop in this area they are forced to market the crop immediately to acquire financial resources for the preparation of the next season and to meet other financial obligations. Their supply therefore becomes artificially higher than demand and prices drop only to increase within three months after selling.

5.1.4 Lack of on-farm appropriate storage facilities

Lack of storage facilities at the farm levels cause high post harvest losses (over 20%). Again, forcing farmers to market their produce immediately after harvest when prices are relatively low compared to off-season periods. As in the case of farmers, most traders do not own modern stores to sustain the crop for longer periods to enable them achieve higher prices during the lean months.

5.1.5 Liberalization policy

Farmers have little, or no understanding of the liberalization policy and how they can best utilize it to their advantage. It came to them when they were not prepared. Traders seem to better understand the liberalization policy.

5.1.6 Low producer prices

Producer prices often go below the production costs particularly during the harvesting periods, when the weather is favourable for production in the entire country and when there are excess imports.

5.1.7 Poor infrastructure & insecurity

The poor road infrastructure tends to increase marketing costs and lack of essential communications such as telephone in the rural areas complicates the reliability of marketing information. There also increasing incidents of insecurity to the market outlets in Eastern and major highways where lorries carrying maize are robbed.

5.1.8 Inadequate and unaffordable credit facilities

Farmers and traders lack credit facilities to cater for their financial needs. Credit from commercial banks is not available on the ground and if available is often expensive and requirements to attain it are beyond the reach of most farmers and traders. This renders farmers and traders non-competitive in marketing of maize.

5.1.9 Uncompetitive maize prices regionally

Kenyan maize prices are usually high relative to maize from other countries in the region and international markets. For this reason, locally produced maize is not competitive.

5.1.10 Lack of adequate & reliable market outlets

Apart from NCPB and major millers, there are no established and recognised market grain dealers that move the market. The few available are not well known by the market participants. The existing traders and farmers are competing for the same market outlets. When NCPB and millers reduce their off-take operations due to excess supply and lack of demand, the maize market collapses.

5.1.11 Wrong timing of imports.

In some cases, maize importation is undertaken during the harvesting period when local maize is entering the market. This distorts the domestic maize market with prices plummeting to below production costs. The local traders are also rendered inactive since importation is normally undertaken by large international traders and millers.

5.1.12 Food Aid.

Imported humanitarian food aid has, at times, distorted the marketing of local maize. The deficit regions, (Eastern and North Eastern Provinces), which are essentially the main market outlets for the surplus producing areas are at times well supplied with humanitarian food aid ordered during months of deficits but which arrives during harvesting time. Some of it often gets its way into the market creates some price distortion.

5.2 Constraints faced by cross-border traders

- Inability of traders to meet customs documentation requirements, e.g. some traders do not have details required by Form C63 such PIN number, they also find costs associated with use of clearing agents prohibitive.
- Inaccessibility to phytosanitary import permits, because KEPHIS offices are not based in some border posts, e.g. Busia and Lwakhakha.

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- Rigid and time-consuming official procedures. For instance, it is difficult to obtain certificate of origin from the source countries. Usually these certificates are obtain from the Capital cities and would be expensive to obtain.
- Differential quality standards causing confusion to cross border maize importation. For instance requirements for moisture content in Kenya is 13.5, while Tanzania's and Uganda's standards are 13% and 14% respectively.
- Loss of profits through currency exchange

6.0 RECOMMENDATIONS

6.1 Marketing recommendations

- **Assembling of maize for critical mass**
 - Producers need to organise themselves into groups through which maize can be pooled together for marketing and receive market information.
 - Traders should also form marketing networks for consolidating maize trading
- **Marketing information**
 - In order to ensure equitable market participation by as many as possible participants, government needs to supply or facilitate the supply of a certain minimum level of market information to as many (potential) participants as possible. Maize stakeholders should be involved in crop forecast, and food balance sheet analysis. Finally there is need to set standards on information dissemination. For example, the price information from Ministry of Agriculture is based on retail price as opposed to wholesale price which is a better indicative of the price of maize
- **Seasonality & low pricing**
 - Producers and traders need to join in groups as is happening in Uganda that can consolidate meaningful quantities and seek for forward contracts from large buyers. Such arrangement can also allow for a skewed mode of payment (part payment) to enable them obtain cash for continued farming and buying respectively.
- **Policy awareness**
 - Often farmers and traders accuse policy makers of being against them without understanding it. It is important that they form strong lobby groups that will fight for sustainable policies.
- **Credit facilitation & reliable market systems**
 - It is difficult to obtain credit without an acceptable collateral system. In order to have an efficient credit, warehouse receipt financing should be introduced by the private sector to allow borrowing using maize as collateral.
- **Imports & Food Aid.**
 - Kenya is an importer of maize, however, the maize sub-sector is very important for this country. There is therefore a need for an efficient information system that indicates the food balance sheet that will enable both farmers and traders to project their business.
 - Food aid often distorts the local market. For this reason, it would be better to buy food aid from the region where price discovery methods are relatively close to ours as opposed to buying maize from sources where farmers are highly subsidised by the government

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- **Regional commodity exchanges**
 - There is need to strengthen existing commodity exchanges in the region and facilitate the establishment of such exchanges in countries where they have not been established.

6.2 Policy and Regulations

a) Customs documentation procedures

- The customs department needs to simplify procedures for customs clearance in order to allow bulk movement of cross border trade. This will require the authorities to define the volume of trade to be facilitated under this simplified method of clearance.
- Requirement of use of Clearing agents for launching customs documents by small cross border traders should be phased out, for agricultural produce, which are not as complicated to enter in the documents as other goods.
- The customs department should introduce the COMESA simplified certificate of origin. It should urge her counterparts in Uganda and Tanzania to do likewise in an effort to facilitate cross border trade in agricultural produce.
- Pre-shipment inspection requirement for maize coming from COMESA and EAC should be phased.
- The import declaration form fees needs to be phased out on intra-regional trade
- The importers recommended waiver of IDF fees on imported maize and other agricultural produce in general. Alternatively, the Government should do away with the minimum IDF requirement so that the amount chargeable is the 2.75% of the CIF import value. The business community also recommended that if the 2.75% is to be retained, efforts be made to harmonize it with the Kenyan trading partners in the EAC and COMESA.

b) Phytosanitary Regulations

- **Harmonize SPS measures with other regional trading partners**

To address the concerns about discrepancy between Kenya's Phytosanitary requirements and those of other neighbouring countries, traders urged for harmonisation of these requirements as a way of enhancing trade in maize. A case in point in the GMO maize which is prohibited in Kenya, yet there are some countries in the region, such as Malawi who have not outlawed the same. There are also concerns by a country like Tanzania that when Kenya asks the Phytosanitary Agency there to certify that the maize being imported is not GMO, there lacks means for carrying out this test. The trader therefore gets stranded between two regulatory authorities!

- **Improve outreach**

KEPHIS should ensure that import permits are easily accessible to maize traders across the country. It is critical that maize trading routes/regions be identified and issuance points be located on these routes. Such information needs to be disseminated to the traders through appropriate means.

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c) Quality standards

To address Kenyan traders' complaints about low quality standards of maize from the region, it has been recommended that regional standards and method of testing and enforcement be harmonized.

There is also need to disseminate the quality standards to the maize traders so that they are aware of the standards even before the import maize

d) Health standards and radioactive testing

It has been strongly recommended that Port Health Office delegates its role of maize inspection for health standards to KEBS, because of their overlapping roles. This will ease burden off the traders and enhance efficiency in the value chain.

Annex 1**List of respondents****A. Government Institutions and Pre-shipment companies**

Institution	Name
Government institutions	
Ministry of Agriculture and Rural Development	<ul style="list-style-type: none"> • Mr. James Oduor, Senior Agricultural Officer
Ministry of Trade and Industry	<ul style="list-style-type: none"> • Mr. Zachary N. Mwaura, EAC Desk • Mr. Geoffrey Osoro, COMESA Desk
Kenya Bureau of Standards	<ul style="list-style-type: none"> • Mr. Zacheus Mwatha, Standards Officer, KEBS Head Office • Mr. Lucas Oduong'o, Officer, Malaba Border Point • Mr. Lawrence Odipo, Officer in Charge
Kenya Plant Health Inspectorate Services (KEPHIS)	<ul style="list-style-type: none"> • Dr. Wilson Songa, Assistant Director, Plant Protection Services • Francis Mwantuni, Malaba Border Point
Ministry of Health, Port Health Office	<ul style="list-style-type: none"> • Mr J.T. Sopuro, Incharge, JKIA Port Health Office • Ms. Phanis Asiyo, Malaba Border Point
Ministry of Finance, Fiscal and Monetary Affairs Department	<ul style="list-style-type: none"> • Mr. Ochieng Ajubo, Principal Economist
Kenya Revenue Authority	<ul style="list-style-type: none"> • Ms Pamela Msando, Assistant Commissioner, Head Office • Mr. Eliezer Oloo, Officer in charge, Lwakhakha Border Point • Mr. J. Koech, Officer in Charge, Malaba Border Point • Mr. Daniel Kangwima and William Oduori, Busia Border Point
Pre-Shipment Inspection Company	
COTECNA	B.J.K Karingithi, General Manager

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B: Small-scale maize producers (acres<50)

Seq	Name	Contacts	Area of operation	Acrea- rage
1	Simon Chelal	Box 42 Kimwarer Tel.0722-943081	UG District, Southern Div., Chembon Loc.	18
2	Nelson Chepkwony	Box 7501, Eldoret Tel.0721-256439	UG District, Soi Division, Sirikwa Loc.	13
3	Stephen Yego	Box 6730 Eldoret Tel. 0721-304646	UG District, Soi Division, Sirikwa Loc.	30
4	Samuel Limo	P.O. BAG Kiptabach, Via Eldoret Tel. 0722-758632	UG District, Southern Div., Kocholwa Loc.	40
5	Davis Locham	Box 746 Eldoret Tel.0733-916874	UG District, Moiben Div., Koinet Loc.	15
6.	Jonathan Kipruto	Box 2514, Kitale	Trans Nzoia District, Cheranganyi Location	45
7.	Anthony G. Mwangi	Box 2707, Kitale	Trans Nzoia District, Central Div., Kiminini Loc.	35
8.	James Chemjor	Box 354, Nakuru	Rongai	40
9.	Richard Busienei	Box 1687, Nakuru	Elburgon	20

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C: Medium-scale maize producers (50> acres<100)

Seq	Name	Contacts	Area of operation	Acra- rage
1.	Kibet Arap Rop	Box. 2004, Eldoret	UG District, Plateau Div.,Lengut Loc.	80
2.	Kiplimo Chemiron	Box 5266, Eldoret. Tel. 0722-473935	UG District, Soi Div., Sirikwa Loc.	65
3.	Eliud Kiplagat	Box 4882, Eldoret	UG District, Moiben Div.	50
4.	Joel Koske	Box 1773, Eldoret. Tel. 0721-311951	UG District,Soi Division, Segero Loc.	70
5	Joseph Tuwei	Box 6747, Eldoret. Tel. 0722-309285	UG District,Soi Division, Sirikwa Loc.	65
6.	Julius Lelei	Box 3328, Eldoret. Tel. 0722-231409	UG District,Soi Division, Kiplombe Loc.	80
7.	Pius Malel	Box 21, Moiben	UG District, Soi division, Barsombe Loc.	90
8.	Gabriel Mwangi	Box 2308, Kitale. Tel. 0722-874155	Trans Nzoia District, Central Div., Kiminini Loc.	55
9.	Kennedy Indimuli	Box 249, Kitale.	Trans Nzoia District, Naitiri Div., Webukhonyi Location	70
10.	Kimani Ng'ethe	Box 1641, Nakuru	Njoro	80
11.	Patrick Maiyo	Box 897, Nakuru	Rongai	75

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D: Large-scale maize producers (acres>100)

Seq	Name	Contacts	Area of operation	Acree- rage
1.	Evans Obwocha Mosigani	Box 1609, Kitale Tel 0325-307118	Trans Nzoia District, Endebess Div., Chepchoina Location	150
2.	Evans Saisi	Box 1473, Kitale. Tel.0722-826425	Trans Nzoia District, Endebess Div.	300
3.	Kiptum Thomas Korgoren	Box 5505, Eldoret. Tel.0721-242481	UG District, Soi Division, Soi Location	450
4	Mathew Lagat	Box 5263, Eldoret	UG District, Cheptiret Division, Koitorok Loc.	200
5.	Philip Cheruiyot	Box 13, Burnt Forest. Tel. 0722-583694	UG District, Kesess Div., Tarakwa Loc.	180
6.	Michael Kirwa	Box 2635, Eldoret.	UG District, Soi Division, Ziwa Location	400
7	Lucas Ruto	Box 1043, Eldoret	UG District Soi Division, Ziwa Location	350
8.	Gerald Otota – Manager, Soiyet (K) Ltd	Box 2275, Kitale Tel. 0325- 55056/30215	Trans Nzoia District, Central Division, Kaptet Loc.	615
9.	Nichodemus Omuchina	Box 1928, Kitale	Trans-Nzoia District, Cheranganyi	200

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E: Small-scale maize traders (bags<100)

Seq.	Name	Contacts	Area of operation	Daily Avg. No. of 90-Kg bags handled
1.	Agnetta wanjala	Box 1957, Eldoret	Eldoret Municipality	15
2.	Stephen Barasa	Box 427, Kitale	Kitale Municipality	30
3.	Gibson Njoroge	Box 37, Lwakhakha	Sirisia, Lwandanyi Location	40
4.	Eveline Kivati	Box 22, Isebania. Tel.0722-226018	Isebania	100
5.	Sabina Nyabuto	Box 15, Kilgoris	Kilgoris Township	60
6.	Joshua Mongo	-	Kericho Township	20
7.	Moses Koskei	Box 347, Eldoret	Eldoret Municipality	80
8.	Dancun Chirchir	Box 4217, Eldoret	Eldoret Municipality	10
9.	Jacob Cheboi	Box 328, Eldoret	Eldoret Municipality	35
10.	Esther Busienei	Box 247, Eldoret Tel.0722-636334	Eldoret Municipalit	40
11.	Thomas Langat	Box 214, Kericho	Kericho Township	70
12.	John Githaiga	Box 653, Kericho	Kericho Township	30
13.	Phanice Akasiba	-	Malaba	10
14.	Rose Musiro	Box 513, Busia. Tel.0733-999538	Busia	25
15.	Pauline Nabwire	-	Busia	15
16.	Robinson Magige	-	Isebania	60
17.	Luis Chacha	Box 29, Kehancha.	Isebania	50
18.	Rosemary Boke	-	Isebania	30
19.	Carol Chepkurui	Tel.0306-22159	Kilgoris Township	40
20.	Joseph Cheruiyot	-	Njipichip-Kilgoris	50
21.	Augustus Kimani	Box 1624, Nakuru	Nakuru Municipality	45
22.	Rachael Wanjiru	Box 3543, Kitale	Kitale Municipality	60

F: Large-scale maize traders including NCPB (bags>100)

Seq.	Name	Contacts	Area of operation	Daily avg. No. Of 90-kg bags handled
1.	Solomon Njoroge	Box 216 Moi's Bridge. Tel.0325-72362/0722-765096	Moi's Bridge	1000
2.	Jemimah Bosire	Box 1806, Kitale. Tel.0733-577251	Saboti Div., Matisi Loc.	300
3.	John Kamau (KITA TRANSPORTERS)	Box 129, Kitale. Tel.0722-663655/0733-722387	Kitale Municipality	1000
4.	Geoffrey Kimani	Box 2416 Moi's Bridge	Moi's Bridge	500
5.	James Njoroge (JARIBU TRADERS)	Box 27, Kamuriai. Tel. 0337-54094/0733-612439	Malaba	200
6.	Samuel Maina	Box 246, Busia. Tel.0722-860419/0721-246868	Busia	300
7.	Gati M. Sirima	Box 15, Isebania.	Isebania	250
8.	Marwa Muita	Box 102, Kehancha	Isebania	400
9.	Duncan Marunya	Box 36, Isebania. Tel.0722-686611	Isebania	200
10.	Josphine Ng'erech	Box 44, Kericho	Kericho Township	120
11.	Daniel Cheruiyot Kirui	Box 10, Sigowett. Tel.0361-30197/0361-31126	Kericho Township	150
12.	Francis Chege Mburu	Box 18, Kamuriai. Tel.0337-54200	Malaba	200
13.	Sole Food & Transporters	Box 5188, Eldoret. Tel.0733-784325	Eldoret Municipality	350
14.	Lucy Kihara & Stephen Kihara Waweru	Tel.0325-31898/0722-440633	Saboti Division, Kitale	600

G: Maize millers

Seq.	Name & position	Business name & contacts	Installed milling capacity (tons/day)	Utilized milling capacity (tons/day)
1.	A. P. Soni General Manager	Maize Milling Co. Ltd Box 8216, Eldoret. Tel.0321-33969/33979	200	150
2.	Said Taib General Manager	Eldoret Grains Ltd. Box 6284 Eldoret. Tel.0321-33988	180	120
3.	Mr. Mohammed Operations Manager	Kitale Industries Ltd. Box 616, Kitale. Tel.0325-	72	72
4.	Mr. Mutoko Silo Controller	Unga Ltd. Box 106, Eldoret. Tel.0321-62154	180	140
5.	Richard Wachira Plant Manager	Unga Feeds Ltd Box 7202, Nakuru. Tel.037-211922/3/4/5	80	80