The Policy Environment for Fuel, Maize and Fertilizer in Tanzania, Kenya, Uganda and Ethiopia

Tanvi Rao and David R. Lee¹

I. Introduction

Twice in the past five years, the world has witnessed sharp run-ups in global commodity prices, led by the prices of petroleum and staple foods such as maize. Some of the most severe commodity price increases since the 1970’s were experienced in 2007-2008. This was the era of the global “food price crisis”: prices of staple foods consumed across the globe – rice, wheat and maize – shot up 224 percent, 108 percent and 89 percent, respectively, between January 2004 and May 2008 (U.S. Department of State, 2011). In just one year, March 2007 to March 2008, FAO’s Food Price Index rose by 57 percent. The prices of food and other basic commodities subsequently fell dramatically in the second half of 2008 as the global financial crisis and economic recession worsened and worldwide demand slackened. However, just three years later, in 2010-2011, another round of sharp commodity price rises occurred, giving rise to widespread speculation of another incipient food crisis and throwing an additional 44 million people (estimated) into extreme poverty in low- and middle-income countries (World Bank, 2011). In the end, commodity prices leveled off between 2010-2012, yet they remain at historically high levels and have remained highly volatile.

Oil prices have followed a similar trajectory of dramatic price changes and high volatility since the mid-2000’s. The international price of a barrel of crude oil increased 146 percent between August 2005 and July 2008, when it reached $145 per barrel, the highest nominal level ever – in real (inflation-adjusted) terms, on a par with oil price levels in the late 1970’s. By the end of 2008, oil prices had collapsed nearly 80 percent to just over $30 per barrel as the global economy deteriorated. However, by early 2011, prices again peaked at over $100 per barrel as the world economy recovered and political tensions in the Mideast increased.

High levels of prices and high price volatility for basic commodities such as oil and maize are of concern for many reasons. It is widely recognized that the poor are particularly vulnerable to high food prices, given frequently high levels of food insecurity even in the best of times, the high percentage of incomes spent on food, and the lack of viable social safety net systems across much of the developing world. Perhaps less widely recognized is the vulnerability of the poor to fuel price shocks. Even though the proportion of household income spent on fuel is much less than that for food – often 5-10 percent compared to 25-50 percent or more for food – fuel price shocks carry with them other important aspects. First, while food price shocks affect the poor

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directly, fuel prices have significant indirect impacts due to the role of fuels as an intermediate input in the production and transportation of food and countless other consumer products. In fact, a recent study in Senegal found that the indirect effect of fuel price increases on real household income was nearly 3.5 times larger than the direct effect (IMF, 2008). Second, while most predominantly agricultural developing countries have significant domestic supply response capacity in reaction to higher food prices, these same countries are often wholly dependent on imports of petroleum products, leaving them with little or no control over supplies and prices. A third and related effect consists of the macroeconomic impacts of fuel price rises – due to high levels of import dependence, global price increases for oil frequently generate negative impacts on the terms of trade, exacerbate current account imbalances, and through high levels of domestic inflation, depreciate the domestic currency.

African countries are disproportionately vulnerable to oil and food price shocks. The countries most vulnerable to oil price shocks are typically low-income, oil-importing countries, and many of these are located in Sub-Saharan Africa (Bacon and Mattar, 2005; Bacon and Kojima, 2006). The focus countries in this study – Tanzania, Kenya, Uganda and Ethiopia – are part of this group of nations. Fully two-thirds (22) of the 30 countries estimated by the World Food Programme to have been the most vulnerable to the food price crisis of 2007-2008 are in Africa (Sanogo, 2009). The impacts of price shocks are not only economic but political; fourteen African countries experienced major civil disturbances, the so-called “foot riots,” in response to food and fuel price increases in the late 2000’s (Berazneva and Lee, 2013).

The frequency and extent of recent price shocks for oil, food and other commodities has led to much attention regarding the causes and consequences of the events of 2007-2008, in particular. A full discussion of these factors is available elsewhere (Headey and Fan, 2010; Abbott and de Battisti, 2011; Lee, et al., 2011) and is beyond the scope of this brief review. In short, there are many factors that have been argued to account for the commodity price rises and price volatility experienced since the mid-2000’s. Given our objectives here, several conclusions warrant brief mention. First, it is not any one factor, but the confluence of many forces that precipitated the dramatic events of 2007-2008. These ranged from long-term forces such as income and population growth in the developing world, to a depreciating dollar which fed the global demand for commodities, to transitory weather shocks, to financial market diversification through speculative demands in commodity markets, and other factors. Second, the rapid growth of ethanol as a petroleum substitute has created an increasingly tight linkage between global markets for oil and those for agricultural commodities. This was precipitated by the banning in the U.S. of the gasoline additive, MTBE, in the mid-2000’s and the subsequent adoption of renewable fuels standards in the U.S. and similar legislation in Europe. This has greatly increased the demand for ethanol as a motor vehicle fuel; approximately 40 percent of the annual corn crop in the U.S. currently is currently used in ethanol production. As a result, since around 2006, the linkages between oil and agricultural commodity markets have become increasingly
tight (Harri, et al., 2009; Trujillo-Barrera, et al., 2011). This means that exogenous changes and volatility in oil prices are now much more likely to be associated with, and correlated with, food price changes, in turn precipitating the impacts on poor countries and poor households that are of concern in this study. (The question of causality among these oil and food price changes is explored in another part of this study). There is also evidence that crude oil prices and fertilizer prices are increasingly highly correlated (Huchet-Bourdon, 2011). Third, many models predict that food prices will remain higher throughout the current decade than 10-15 years ago (FAO, 2011b). For example, OECD and FAO predict that global maize prices in 2015-2020 will run 48 percent higher than they were in 1998-2003. In short, the factors that led to the commodity price increases of the last 2000’s are not purely short-term and transitory, but include numerous long-term structural changes that are widely expected to contribute to keeping food prices high.

In addition, a further result that is specifically relevant to this review is the important role played by policy factors. One of the main contributing factors to the price shocks of the late 2000’s were the policy actions of many governments – export bans, export taxes, high import subsidies, etc. – to protect domestic consumers from the impacts of global price increases. These “beggar thy neighbor policies” made already high prices even higher by decreasing export supplies and increasing import demands. These policy interventions were a highly visible, and widely criticized, means of influencing prices during the years of the global food price crisis. Additionally, petroleum markets and prices have long been notoriously sensitive to policy actions by OPEC and large oil exporters (e.g., Saudi Arabia), as well as political events in the Mideast, in particular. Although the power of member countries to influence global oil prices has been reduced as a result of the discovery and exploitation of new oil reserves elsewhere around the globe, OPEC countries still control three-quarters of global oil reserves and a substantial share of production capacity, so policy developments, both directly and indirectly, will continue to play an important role.

Whether in food or fuels, the key point is that trade and domestic policies of many types heavily influence commodity markets across East Africa, as elsewhere. Consequently, discerning the breadth and depth of these policy interventions in markets for fuel, food (e.g., maize) and fertilizer is critical in reaching a broader understanding of the impacts of market and price shocks on food and fuel insecurity experienced by poor households in the region. This brief review identifies key recent policy developments in the markets of petroleum-based fuels, maize and fertilizer in the four focus countries: Tanzania, Kenya, Uganda, and Ethiopia. Given the focus on price transmission processes in another component of this study, another objective of this review is to identify policy elements, recent and current, that may inhibit or delay the pass-through of global market prices to the national and sub-national level. Even though international market developments also play a critical role, the focus here is on domestic policy environments.
As background to the specific country-commodity policy overviews that follow, Table 1 shows some recent figures on consumption, imports and price changes for fuel and maize in the four study countries. The consumption levels demonstrate the small market sizes, on a global scale, for petroleum products in these countries. Apart from Uganda, however, these levels are substantial in the African context. All countries except for Kenya have no domestic petroleum refining capacity, therefore, the import levels more or less match consumption levels. Petroleum products account for 5 to 8 percent of total energy needs of Tanzania, Uganda and Ethiopia and slightly more in Kenya. The last column shows the percentage changes in retail price levels between 2004 and 2008 for gasoline and between 2005-2008 for maize in these countries.

Table 1: Total consumption, imports, and retail price changes for petroleum and maize

<table>
<thead>
<tr>
<th></th>
<th>Total Consumption (2010)</th>
<th>Level of Imports (2010)</th>
<th>% Change in Price Level</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fuel (KBPD)</td>
<td>Maize (1000 MT)</td>
<td>Fuel (KBPD)</td>
</tr>
<tr>
<td>Tanzania</td>
<td>30.70</td>
<td>3800</td>
<td>30.74</td>
</tr>
<tr>
<td>Kenya</td>
<td>79.80</td>
<td>3200</td>
<td>52.16</td>
</tr>
<tr>
<td>Uganda</td>
<td>23.00</td>
<td>1300</td>
<td>22.98</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>42.30</td>
<td>4650</td>
<td>42.50</td>
</tr>
</tbody>
</table>

Note: KBPD = thousand barrels per day. Fuel consumption and import data are from the EIA database; maize consumption and import data for maize are from the USDA FAS database (http://www.fas.usda.gov/psdonline/); wholesale price changes are from the FAO GIEWS database (http://www.fao.org/giews/pricetool/); retail price data are from GTZ international fuel prices database.

In the sections that follow, we review in greater detail the recent policy environment for fuel (petroleum products), maize and fertilizers, respectively, in each of the four countries.

II. Fuel Policies

This section briefly summarizes the policy environment for petroleum-based fuels in the four countries. The focus is on key trade, price and infrastructure-related policies that influence fuel prices in these countries. In a global context, all four of these countries represent relatively small markets for petroleum, ranging from 13,400 barrels per day in Uganda to 67,800 barrels per day in Kenya (this compared to 446,000 barrels per day in South Africa, for example). Of the four

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2 This section’s characterization of national policy regimes and industry structural issues borrows widely from a recently completed comprehensive World Bank study of petroleum markets in 12 Sub-Saharan African countries (Kojima, et al., 2010). Details on import management and price capping for Tanzania are drawn from EWURA's website (www.ewura.com/fuelprices.html). Corresponding details for Kenya are from price regulation documentation on the ERC (Energy Regulatory Commission) website (http://www.erc.go.ke/pricereg.doc). The section on Ethiopia draws from GIZ's international fuel prices study (2009).
countries, only Kenya has domestic refining capacity, which accounts for about half of daily requirements.

The fuel price crisis of the mid-2000’s had important impacts on policy regimes, markets and prices for petroleum-based fuels in Africa, as elsewhere. In many countries, governments used fiscal policy measures to reduce prices to consumers, suspended automatic price adjustment mechanisms that had long been in place, and engaged in price smoothing measures to moderate fuel price volatility (Kojima, et al., 2010). Among the four focus countries here, Tanzania and Kenya moved from a system of deregulated prices to capping retail and wholesale fuel prices. This was in response to the fact that, in times of volatile global oil prices, oil companies are quick to pass on higher prices to consumers but when prices fall the reverse typically does not follow suit, or does so with longer lags. On the other hand, Ethiopia, a country which has historically regulated fuel prices, eliminated diesel and kerosene subsidies and moved to a more market-based policy regime in 2008 as subsidies were no longer sustainable. There have also been important changes in importation mechanisms, information dissemination and the fuel distribution infrastructure. In Uganda, the recent discovery of oil deposits can be expected to dramatically alter past policy regimes and the domestic oil industry itself once they become exploited and plans to build refining capacity are completed.

Table 2 below summarizes some of the key policy interventions that influence fuel prices in the four East African countries. These are elaborated in detail in the remainder of this section. There are numerous policy mechanisms common to countries in the region. Since all four countries are wholly dependent on supplies of refined petroleum – or in the case of Kenya, a mix of crude and refined supplies – import management policies are central. At one extreme is the exclusively private market importation of fuel supplies in Uganda, while importation is handled by a parastatal enterprise in Ethiopia, and through open tender systems in Tanzania and Kenya. Price regulation (e.g., price capping) is employed in all but Uganda, using different formula-based pricing systems taking into account three components: 1) import costs, 2) industry-related operational costs – storage, customs fees, transportation, and wholesale and retail margins, and 3) government-related costs, or taxes. Fuel tax levels are high in all countries but Ethiopia. Underlying these and other policies is the legal and institutional environment in each country. This environment has been described by the World Bank (Kojima, et al., 2010) as “good” in each country, but regulatory monitoring and enforcement capacity is characterized as “weak,” widely affecting such areas as fuel specifications, quality and labeling, oversight of imports and prices, and monitoring of wholesale and retail operators and installations.

In addition to the policy and regulatory environment, the fuel supply and distribution infrastructure in these four countries, as in much of Africa, poses many challenges to an efficiently functioning market for petroleum products. These structural impediments include (Kojima, et al., 2010): 1) small market size, which makes it difficult to achieve economies of
scale in fuel procurement and distribution and limits competition; 2) a related *inability to realize scale economies in refining* (a minimum of 100,000 barrels per day is considered necessary to be cost competitive); 3) the *difficulty of maintaining competition* in small markets with high levels of state intervention, with resultant impacts on costs, prices, and product quality (fuel markets are relatively concentrated in all countries but Uganda); and 4) a wide set of *constraints related to the physical supply infrastructure* – ports, pipelines, storage facilities, rail transport and trucking – which assume varying levels of severity in these countries. The notes below identify some of the key recent policy, pricing, regulatory, and fuel supply and infrastructure-related developments in the four study countries.

**Table 2: Key Fuel Policy Interventions in Four East African Countries**

<table>
<thead>
<tr>
<th>Fuel Policy</th>
<th>Tanzania</th>
<th>Kenya</th>
<th>Uganda</th>
<th>Ethiopia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Import Management</strong></td>
<td>Bulk Procurement System (BPS) introduced in 2011</td>
<td>Open Tender System for import of crude &amp; refined products since 2003</td>
<td>Independently by oil marketing companies</td>
<td>Exclusive import mandate held by Ethiopian Petroleum Enterprise</td>
</tr>
<tr>
<td><strong>Price Regulation</strong></td>
<td>Price capping since 2006-07</td>
<td>Price capping since 2010</td>
<td>No price capping or regulation</td>
<td>Historical price capping and institutional adjustment of retail prices</td>
</tr>
<tr>
<td><strong>Level of Taxation</strong></td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Low</td>
</tr>
<tr>
<td><strong>Domestic Refinery</strong></td>
<td>No refining capacity</td>
<td>Protected. Marketers are required to process up to 50% of local consumption at refinery. Independent import by domestic refinery since 2012</td>
<td>No refining capacity</td>
<td>No refining capacity</td>
</tr>
<tr>
<td><strong>Information Dissemination</strong></td>
<td>Detailed price caps, by location, are published by the regulatory authority, EWURA</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
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3 Data are from GTZ International Fuel Price, Mid-November 2010. Countries are categorized as being “high” taxation countries by GTZ if the retail price of fuel is above the price level of the United States and below the price level in Romania. If they exceed the price level in Romania they are classified as “very high taxation” countries.
**Tanzania**

- Tanzania represents a relatively small market for petroleum products and has no existing refining capacity. In 2008-2011, consumption of petroleum products\(^4\) in Tanzania was in the range of 32,700-43,000 barrels per day. However, in comparison to other East African petroleum industries, the market for the supply of petroleum is not concentrated and is fairly competitive.
- Tanzania is a 100% importer of petroleum products and purchases fuels at world market prices.
- Tanzania does not impose explicit tariffs specifically on the import of petroleum products.
- Recently, the government’s focus has been on reducing the inefficiencies that arise out of the fragmentation of imports and on reducing congestion at the ports. To address these problems, in 2011, a Bulk Procurement System (BPS) for fuel was introduced in the country. Now, an Open Tender System is used to award one Oil Marketing Company (OMC) the contract for importing all petroleum products for the country, which are then distributed among the other OMCs. Fourteen companies each control between 2.0 and 16.2 percent of petroleum market sales (Daily News, 2011). The tendering process is conducted every two months and the OMC that quotes the lowest import cost is awarded the contract.
- As far as the regulation of retail prices of petroleum products goes, until 2000, the Ministry of Energy and Minerals was the regulator of the entire petroleum sector. In 2000, the downstream petroleum industry was liberalized as part of the country’s structural reforms. However, following high fuel prices in the mid-2000’s, parliamentary legislation re-introduced price regulation by way of capping retail and wholesale prices of petroleum products – for gasoline, diesel and kerosene. The Energy and Water Utilities Regulatory Authority of Tanzania (EWURA) is the *de jure* economic regulator of the sector.
- OMCs can sell their products at a price that gives them competitive advantage, provided that the price does not exceed the price cap for the relevant product.
- EWURA calculates wholesale price caps based on a specific formula which includes the actual FOB\(^5\) price quoted by the importing company under the tender, plus costs payable to local authorities such as wharfage, customs processing fees, weights and measures fees, a regulatory levy, etc., as well as other costs such as demurrage costs, ocean and evaporation losses. To these are added taxes payable to the government and a component to cover the OMC’s overhead costs and profit margins. Once a wholesale cap has been

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\(^{4}\) Includes motor gasoline, jet fuel, kerosene, distillate fuel oil, residual fuel oil, liquefied petroleum gases and “Other Products.”

\(^{5}\) FOB = Free on Board.
calculated, other dealers’ margins and transport costs are added to calculate the price cap for retail pump prices.

- Government taxes for petroleum products are imposed by way of a fuel levy and an excise duty. In total, the level of taxation is high globally, and for the region. As of July 2012, total government taxes were roughly 25 percent of the retail price cap.
- Information about the downstream petroleum sector is not readily available to the public in many Sub-Saharan African countries. Tanzania is an exception. EWURA’s website posts retail and wholesale price caps for gasoline, diesel and kerosene twice a month on its website, by location, as well as detailed formulae for how they are calculated.
- In terms of infrastructure, storage facilities in Tanzania are widely considered to be adequate and are roughly equivalent to 137 days of consumption. The major infrastructural bottleneck that directly translates into high fuel prices for Tanzanians are the limitations associated with its ports.
- The three major ports in Tanzania are at Mtwara, Tanga and Dar es Salaam. The majority of the oil imported is through the port at Dar. Currently, the Kurasini Oil Jetty (KOJ) at Dar has the capacity to offload around 45,000 MT per month whereas the average monthly requirement was stated to be 150,000 MT by the Petroleum Importation Corporation (PIC) (Tanzania Daily News, 2012).
- Another problem that causes delays is the Tanzania Revenue Authority’s installation of flow meters to verify volume, instead of the almost-universally used tank dips (Kojima, et al., 2010).
- A Single Mooring Point (SPM) with an offloading capacity three times that of KOJ at the Dar port was recently completed and it is expected to soothe some of these bottlenecks.

**Kenya**

- While Kenya currently imports almost all of its crude oil requirements, it also houses the only oil refinery in East Africa, that of Kenya Petroleum Refineries Ltd. (KPRL), located in Mombasa.
- The total market size for petroleum products in Kenya is large (for the region) at an estimated consumption level of 67,800 barrels per day, with the level of imports of petroleum products at around 34,980 barrels per day.
- The downstream petroleum industry in the country is concentrated, and shortages of diesel and kerosene due to major oil marketers hoarding petroleum products are not unheard of.
- There are no specific import tariffs on the import of petroleum products, but the domestic refinery is protected directly through minimum processing requirements.
- The Ministry of Energy coordinates two Open Tender Systems (OTSS) to import oil. One OTS is for crude oil and the other for refined products. The import of crude oil is such that 50% of the demand for petroleum products is met by processing crude at the
domestic refinery (by legislation). The remaining 50% of demand is met through importing refined products, of which 35% of these products are imported under the OTS and the remaining companies are allowed to import on their own, outside the tender requirements.

• In terms of price regulation, the petroleum sector in the country was deregulated in 1994. However, in 2006 an act was passed to empower the Energy Regulatory Commission (ERC) to regulate prices of petroleum products. It was only in 2010 that price regulation actually came into effect. Currently, gasoline prices at the pump are regulated through price capping on a monthly basis by the ERC. Prices are set based on the cost of the imported product, logistical costs, taxes and a set of wholesale and retail margins, similar to the system in Tanzania.

• Government taxes on petroleum products are high and are broken down into components consisting of an excise duty, road maintenance levy, petroleum development levy and a petroleum regulation levy. While tax magnitudes in absolute terms are difficult to ascertain, GTZ (2009) documents that government taxes constitute 30% of the total mark-up on imported cost of oil.

• Efficiency losses in Kenya’s downstream sector are also due to its domestic refinery which is partly owned by the government. A level of 100,000 barrels a day is considered to be an economic size for a world-class refinery in a liberalized market. KPRL is a comparatively small refinery. Moreover, until recently it did not have enough cracking capacity, which is required to produce white products (like LPG) that are in higher demand currently. The refinery is capable of running at only half of its capacity and its operations are often disrupted by water shortages and power outages (Kojima, et al., 2010).

• Kenya’s domestic refinery, KPRL, is subject to explicit protection. All licensed importers of petroleum products are required by law to participate in crude processing. This means that importers have to divide oil importation between crude and refined products such that ultimately KPRL processes 50% of total petroleum consumption; OMCs therefore cannot import only refined products. Through this process the KPRL is protected through a minimum base load processing level. The required amount was at 70% until February 2009, but was reduced to 50% since then.

• With a vision to improve the petroleum sector supply chain, the Kenyan government has been in the process of making major changes to the refinery. In July 2012, KPRL was converted from being a tolling refinery to a merchant refinery. Effectively this marks a change from a regime wherein KPRL would only receive crude oil from Oil Marketing Companies (OMCs) for processing, to a regime where it is now free to purchase its own crude oil. It is expected that with this change, KPRL will now be able to source more economical crude oil from non-traditional and cheaper sources. Investments are also

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6 Currently the refinery is owned 50%-50% by the Kenyan government and Essar Energy Overseas Ltd. of India.
being made for the refinery to start generating its own electricity and reduce reliance on the national grid. Capacity building for the generation of white products is also underway.

**Uganda**

- Uganda is a landlocked country which currently has no refining capacity of its own and imports all of the petroleum products it consumes.
- Uganda’s market size for petroleum products is small, at around 13,400 barrels a day.
- Owing to its geographical location, all of Uganda’s oil imports first land at the ports at Mombasa in Kenya or Dar es Salaam in Tanzania and are then transported nearly 2,000 kms inland, first by pipeline and then by road.
- With a Herfindahl-Hirschman Index (HHI) of 1831\(^7\), the market for the supply of petroleum products is considered concentrated, with limited effective competition (Kojima, et al., 2010). Internationally, competition in the downstream petroleum sector has been shown to force market players to improve efficiency and it also reduces opportunities for corruption.
- However, the small market size in Uganda makes it difficult for the market to be competitive because of significant economies of scale in petroleum importing and wholesaling. In such a setting, government regulation can ameliorate monopolistic behavior to a large extent, but the regulatory environment in Uganda is generally perceived to be weak.
- The importation of petroleum products into Uganda is uncoordinated and is done independently by Oil Marketing Companies in a liberalized setting with no government intervention.
- Wholesale and retail prices at the pumps are also liberalized and unlike its East African neighbors, Tanzania and Kenya, there is no capping or regulation of prices.
- Retail prices of petroleum products are generally made up of three components: a) the **landed cost**, which is the cost of the product at the port, b) the **oil industry component**, which includes costs of transport and storage and industry margins, and c) the **government component**, which includes taxes.
- The government component of retail oil prices in Uganda is high, as the government levies tax on petroleum products in the form of an excise duty. In 2007-08, this levy was increased from UGX 720 per liter of gasoline to UGX 850 per liter and was unpopular among the public, who tend to blame the government for high fuel prices (GTZ, 2009). Fuel taxes in Uganda are the highest among the four countries under consideration. At times, the government reduces this tax to reign in escalating fuel prices as it did in 2011.

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\(^7\) A market with HHI above 1800 is generally considered highly concentrated and, while less than 1000 is considered unconcentrated.
• The oil industry component in Uganda also stands out as being the highest in Sub-Saharan Africa. A part of the reason is high transport costs, but even among landlocked countries, this component is relatively high.

• One reason for high oil prices is the fact that fuel shortages are extremely common in Uganda. In July 2010 for instance, the country faced a fuel shortage due to delays in imports from the Kenyan port of Mombasa (The Citizen, July, 2010) and in September of the same year a fuel crisis was reported again, this time on account of reported piracy at sea that caused ships to be delayed, hiking prices upwards. In March 2011, fuel price increases were reported again and the attributed reasons were supply inefficiencies in Kenya’s central procurement system, operated by the Kenyan government. More recently, the fluctuating value of the shilling has also been responsible for inching petroleum prices up.

• Even during the last three months of 2008 and the beginning of 2009, when world oil prices fell sharply, Uganda was unable to enjoy lower fuel prices due to supply disruptions from Kenya.

• Fuel storage capacity in Uganda is very inadequate, sufficient to last not more than 20 days (Kojima et al, 2010). Greater storage capacity can help protect the market against supply disruptions, though these are typically expensive to build and maintain. Small market size and a low degree of competition further inhibit investment in supply infrastructure.

• Another way to regulate oil supply disruptions is to resort to fuel-rationing, but this has not been practiced in Uganda. Overall, however, the prices of petroleum products in Uganda are classified as being high for the region.

• Significant oil reserves were discovered in 2006 in the Lake Albert Basin in western Uganda and additional reserves were discovered in 2012, pushing the total estimated reserves to 3.5 billion barrels (BBC, 2012). This could eventually amount to a domestic petroleum supply of as much as 200,000 barrels per day. Uganda is in the process of building an oil industry from scratch. The government has initiated an “Early Production Scheme” (EPS) which includes building facilities to pump crude oil and building oil-refining capacity. Currently, projects are being held up and deadlines postponed due to negotiations between the government and large oil companies over licenses, facility capacity and stipulations to guide the selling of oil products.

• If Uganda manages to facilitate this process relatively smoothly and build oil industry infrastructure with limited rent-seeking, it could be poised to drastically change the way it transacts with its neighbors and the world over oil. It remains to be seen if the discovery of oil will be passed on to consumers by way of lower prices for petroleum products and if the country manages to translate its oil-gains to productive asset creation.

Ethiopia

• In 2008, the total consumption of petroleum products in Ethiopia was around 47,000 barrels a day. The energy sector in the country in characterized by its overwhelming use
of biomass energy. Biomass energy provides for over 90 percent of the country’s energy needs, while petroleum products amount to 3-5% overall.

- Since the closure of the Assab refinery in 1997, Ethiopia has had no domestic refining capacity and currently imports all of the petroleum products it uses.
- The parastatal Ethiopian Petroleum Enterprise (EPE) has the exclusive mandate to import oil in Ethiopia. On the distribution side too, the downstream industry is heavily concentrated with only around 6-7 oil companies operating.
- The mechanism to adjust petroleum prices is institutionalized, with the EPE and other oil distribution companies submitting appeals to the Federal Ministry of Trade and Industry (MoTI) to propose price revisions. This is to be done every three months but the state also intervenes on an ad hoc basis.
- MoTI adjusts retail prices and regulates the distribution of nearly all petroleum products except for LPG and lubricants which are entirely in the hands of the private sector. MoTI’s price adjustment formula uses domestic taxes, levies and margins as flexible variables that can be used to manipulate retail prices at gasoline stations (GTZ, 2009).
- Traditionally, the Ethiopian fuel economy has been characterized by a high level of subsidies, especially for diesel and kerosene. The Petroleum Price Stabilization Fund has been a facility used by the government to stabilize domestic retail prices and to cross-subsidize selected petroleum products. In the face of high oil prices in the mid-2000’s, Ethiopia froze fuel prices between August 2006 and August 2008.
- However, continued high and rising oil prices, especially between 2005/06 and 2008, heavily influenced the government’s capacity to continue fuel subsidies. Petroleum imports accounted for between 30 and 40% of total export earnings annually until 2005/06, but rose substantially to 87% in the fiscal year 2006/07 (GTZ, 2009).
- In response, the Ethiopian government eliminated fuel price subsidies altogether in October 2008, and domestic prices were set higher than import costs to enable the Oil Stabilization Fund to repay its accumulated debt to the banking system. (Several other countries across the world like Jordan, Vietnam and China also took the oil price decline of 2008 as an opportunity to pass on some of the price rise on the population and ease their budgetary problems.)
- Some storage capacity in the form of the National Petroleum Reserve Mechanism is present to ensure uninterrupted oil supply in Ethiopia. The capacity of all depots is 370,000 m³, sufficient to last about 90 days.

### III. Maize Policies

This section briefly reviews key maize sector policies in the four study countries which together have had major impacts on the recent trajectory of maize prices in the region. Maize prices in the four study countries were high and volatile in the period beginning in 2003 up to the global
“food crisis” years of 2007-2008. Data from FAO’s GIEWS price tool show that in Tanzania, for example, prices rose by a steep 182 percent in the period between June 2007 and January 2008. More recently, between 2008 and 2012, prices have remained highly volatile in the region. Maize prices in Tanzania have risen by an average of 50 percent, although there was a brief period in April-December 2010 when prices were roughly 30-40 percent lower than 2008 levels. In Kenya, the six-month period between November 2007 and April 2008 saw prices increase by 117 percent. The average price increase during 2008-2012 was around 30 percent although cumulative figures tend to mask extreme volatility during shorter periods. In Uganda and Ethiopia, the six-month periods between the end of 2007 and the mid-2008 saw price increases in excess of 100 percent. In Uganda, maize prices in 2012 were around 25 percent above 2008 levels, while in Ethiopia prices were about 15 percent lower than the peaks experienced in 2008.

Policy regimes for maize in the region have changed significantly over time. Currently, none of the four countries exercise explicit price controls, as opposed to an earlier regime prior to the 1990’s, when governments set producer and retail prices and implemented countrywide grain procurement. Three countries – Tanzania through its Strategic Grain Reserve, Kenya through procurement by the NPPB (National Cereals Produce Board), and Ethiopia through buffer stocks of the Ethiopian Grain Trade Enterprise – currently maintain buffer stocks of maize, although procurement tends to be small relative to the size of the markets, except for Kenya. Most active government interventions in maize markets are through trade policies in the four countries. Tanzania, for instance, imposes frequent maize export bans and issues import permits to control domestic supply.

Table 3 highlights the important policies and how they vary by country. The following country sections elaborate some of the key policy-related developments in the maize sector.

**Tanzania**

- Maize is the main staple food crop in Tanzania. In recent years, national production of maize has been fairly stable, ranging between 3.3-3.7 MMT (USDA, 2012), nearly equivalent to national consumption. Prices, however, have been high and volatile. Between 2006 and 2009, the wholesale price of Tanzanian maize experienced an increase of 46.6 percent with considerable annual volatility\(^8\) (FAO, GIEWS data). As of November 2012, maize prices in the country were at $427 US/ton, 50 percent above 2008 levels.

- Maize imports and exports are very small relative to the size of the market. In recent years, Tanzania has alternated as a net exporter or net importer; for example, in the six years between 2006/2007 and 2011/2012, the country was a net exporter in three years, a net importer in one year, and in two years, exports and imports exactly offset each other.

\(^8\) The average price hike between 2005-2008 was 18.9% (Table 1).
Table 3: Key Maize Policy Interventions in the Four East African Countries

<table>
<thead>
<tr>
<th>Maize Policy</th>
<th>Tanzania</th>
<th>Kenya</th>
<th>Uganda</th>
<th>Ethiopia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price regulation</td>
<td>No price controls</td>
<td>No price controls</td>
<td>No price controls</td>
<td>No price controls</td>
</tr>
<tr>
<td>Grain procurement</td>
<td>The Food Security Department directly competes with the private sector to buy maize and maintains a Strategic Grain Reserve. Procurement is small relative to the size of the market.</td>
<td>Procurement and selling by the National Cereals Produce Board (NCPB) alongside a private channel. NCPB’s operations exert considerable pressure on market prices.</td>
<td>No procurement</td>
<td>Buffer stocking by the Ethiopian Grain Trade Enterprise. Its operations are small relative to market size.</td>
</tr>
<tr>
<td>Import Policy</td>
<td>Imports and exports are small relative to market size. Issuance of import permits by the Food Security Department.</td>
<td>In 1990-2004, 20-30% import tariffs. From 2005 onwards, maize imports from COMESA countries taxed at 2.75% and other imports at 50%. Imports from Uganda and Tanzania not taxed since 2008.</td>
<td>No explicit import policy</td>
<td>No explicit import policy</td>
</tr>
</tbody>
</table>

(Ahmed, et al., 2012). Net trade in maize amounted to only 0.6–1.4 percent of domestic production annually during this period.

- Because maize imports and exports are quite small and the government retains considerable control over the maize market, local maize prices are not typically closely linked to world prices. Moreover, there is a large amount of variability in prices between surplus zones (southern highlands) and deficit zones (Mtwara and Dar) as well as between seasons, particularly between the harvest and the lean seasons (Minot, 2010).
- The current state of government intervention has evolved out of a much more controlled regime prior to the 1980’s, which was characterized by country-wide procurement and government fixed producer and retail prices.
- Presently, producer and retail prices of maize are not controlled, however, the Food Security Department procures maize to maintain a Strategic Grain Reserve (SGR) to ameliorate situations of food insecurity when they arise. These official prices often end up acting as minimum floor prices. Retail prices are determined by market forces and
farm-gate prices are obtained by deducting marketing and transport costs from retail prices. Thus, producer prices in the regions with the highest transport costs are the closest to the official (minimum) prices, and most likely to become the major sources for government procurement, whereas market prices in other surplus regions are much higher than the official premium price. Through liberalization in the 1990s the private sector has become more efficient in food marketing. Marketing costs and margins have been reduced and private sector trade has become more and more competitive.

- The Food Security Department also controls import and export of maize to and from the country. The Department has the mandate to issue import permits for maize. Import permits are issued only when domestic maize supply is lagging behind actual demand; the permit for a single shipment is valid up to six months and can be extended (ESRF, n.d.).

- The exportation of maize is a sensitive political issue and the government normally discourages farmers from selling their produce to outside traders and domestic traders from selling to neighboring countries. Because trading maize within the country is less attractive than cross-border trade, parallel markets using unofficial routes through Malawi, Zambia and Kenya operate, especially when there is a food shortage in one of these countries.

- The government often responds by imposing frequent and explicit export bans, often on an ad hoc basis. There were export bans for maize in the country between January-May 2008. Then again in 2009 another ban was imposed which was lifted in April 2010. A ban was re-introduced in May 2011 with an intended duration of at least three months (FAO, 2011a).

**Kenya**

- Maize is the main staple food in Kenya and its share in staple food expenditures is highest among the poor. Kenya transitioned from being a net exporter to a net importer of maize during the early 1990s when the production of maize stagnated but demand, driven by population growth, progressively increased. In the five years during 2008-2012 domestic production has been in the range of 2.3-3.2 MMT while domestic consumption has been in the range of 3.2-3.6 MMT (USDA, 2012), with the balance being imported from neighboring countries.

- The government of Kenya influences maize prices in the country through two major policy channels: 1) *Procurement and selling of maize* at administratively determined prices by the National Cereals and Produce Board (NCPB), and 2) *Restrictions on maize imports* through the imposition of a variable maize import tariff. These are further described below.
1. **Procurement and selling by the NCPB** (Jayne et. al, 2005, 2008):
   - The NCPB procures and sells maize at administratively set prices and stores maize as a contingency against future shortages. A private sector marketing channel functions alongside the NCPB in the maize market and here prices are set by market forces.
   - The NCPB had a heavy presence in the maize market between 1988 and 1995, during which time it purchased close to 50-70% of the estimated maize sold in the domestic market. Post-1995, procurement fell to nearly 20 percent of the previous amount.
   - Post-1995, other restrictions such as those restricting private trade in maize being transported across district boundaries were also removed. Nevertheless, the NCPB continues to influence private market prices through its price-setting strategies.
   - In drought years such as in 1997, 2000 and 2003, the NCPB set prices below market prices. However, since 1995, the NCPB has usually set prices above market levels. With wholesale prices in major surplus zones of Kitale and Nairobi being considerably higher than world market levels between 1989 and 2004, there are reasons to believe that the NCPB’s operations raise parallel market prices. Jayne, et al. (2005) estimate that NCPB operations have raised market prices by 15-18 percent.
   - Between the 1990/91 and 2003/04 marketing years the NCPB cumulatively purchased 16.8% more maize than it sold domestically. To ease stock accumulation, the NCPB has often exported maize at a loss, and also distributed maize for drought relief operations in the country.

2. **Tariff and Trade policy**
   - Prior to 2005, Kenya’s maize trade policy was characterized by a high degree of uncertainty with respect to export and import bans, along with frequent and major changes in import tariffs. With the country entering into regional initiatives under COMESA\(^9\) and the EAC\(^10\) in 2005, its trade policies have stabilized to a large extent.
   - The maize import tariff was generally set at 20-30 percent over 1990-2004 but according to previous analysis by Jayne et al. (2005) market prices were raised by only 2-3%. One reason for this is that a lot of maize trade into Kenya goes unreported and hence untaxed on account of corruption at the borders.
   - Since 2005, maize imports from other COMESA countries have been taxed only at the rate of 2.75%, while maize imports from outside of COMESA are charged a 50% import tariff. However, since 2008, imports from Uganda and Tanzania, two common sources of imports, have been charged no tariff.
   - Several non-tariff barriers to regional trade also exist with the Kenyan government requiring several additional import documents that are difficult to obtain as well as

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\(^{9}\) Common Market for Eastern and Southern Africa

\(^{10}\) Eastern African Community
barriers in the form of quality, safety and phytosanitary standards. These barriers are significant as compared to other COMESA countries.

- In 2008, there was a massive short supply of maize in the country, requiring large levels of imports. Because of the government’s decision to maintain the 50% import duty, sufficient grain was not imported well in advance of the depletion of domestic supplies, resulting in congestion at the ports. Maize prices in Kenya remained very high in late 2008 despite the tumbling of world prices starting in October 2008. Finally in January 2009, the import duty on maize was lifted but because imports were concentrated in the 3-4 months immediately afterward, the internal railway system was unable to hold up to the load and prices continued to remain high. Only by September 2009 did maize prices stabilize in line with the import parity price. Nevertheless, prices are volatile and as of 2012 the monthly price of maize in Kenya ranged between $363-449 US/ton with corresponding prices for Tanzania ($310-427 US/ton) and Uganda ($220-392 US/ton) being lower.

- As pointed out in a recent World Bank Policy Note (Demombynes and Kiringai, 2011), in recent years, the combined effects of Kenyan price policies and trade policies have: 1) kept prices high to consumers, while 2) not inducing significant supply response by farmers due to infrequent participation in NCPB procurement by smallholders, who are typically net maize buyers, and 3) leaving national maize prices even more unstable than global prices. These policies have also been the frequent subject of popular criticism (Business Daily, 2012). Among the World Bank recommendations to address these outcomes are (Demombynes and Kiringai, 2011): 1) greater transparency in setting buying and selling prices for maize; 2) ending the current policy of pan-seasonal buying and selling prices; 3) improving incentives and financing for private grain storage; and 4) enhancing intra-regional maize trade through improving market infrastructure, reducing regional trade barriers, and other mechanisms.

**Uganda**

- Unlike much of East, Central and Southern Africa, Uganda is less exclusively dependent on maize as its staple food crop. As a result, it is a net exporter of maize and has often ended up supplying maize to neighboring countries, especially Kenya\(^{11}\) and also to the World Food Program (WFP) (Magnay, 2004).
- During the period 2008-2012, Ugandan maize production was in the range of 1.2-1.8 MMT with net exports over the period ranging between 25,000-95,000 MT.
- The market for maize and other grains in Uganda was liberalized in the 1990’s. Currently the government exercises no price controls and there is no public procurement for maize (Haggblade and Dewina, 2010).

\(^{11}\) Kenya has had frequent shortages of maize going back to 1991.
While the Ugandan government aims to promote the export of maize and imposes no export bans, quotas or duties, the grain market in Uganda is often threatened by the trade policies of its neighbors and procurement mandates of the WFP. For instance, during 1995, during the Rwandan crisis, Uganda supplied over 100,000 MT of food to various NGOs, simulating maize production by Ugandan farmers. However, in the following year there was very little demand from both Rwanda and Kenya, resulting in a collapse in the grain market. Similarly, in 2001, Kenya closed the market to Ugandan maize\(^{12}\), resulting in another collapse. A supply contract with Zambia in this year did ameliorate the situation to some extent but due to lack of proper funding much of the maize was unfit for export and had high levels of insect damage and disease. The rural finance system also collapsed in the face of bad loans and lack of demand. These scenarios led to reduced planting and lack of production in 2002, despite there being strong local and regional markets.

Regional shortages which drive up maize prices in Kenya and elsewhere typically trigger increases in Uganda’s domestic maize price. Ugandan maize prices also increased sharply\(^{13}\) when there was political turmoil in Kenya during 2007-08, despite domestic self-sufficiency.

During stable periods, maize prices in Uganda follow a bi-modal pattern. Prices fall to their lowest levels during July and August which is when the first harvest of maize takes place, and then again in December and January, during the harvest in the second season.

Procurement from the WFP also exerts a stabilizing influence on the Ugandan maize market. When purchase by the WFP is present, production is simulated because a contract from the agency provides security to local banks to advance finance to grain traders to execute spot contracts. However, since 2010 or so procurement through this channel has been on the decline, primarily due to the lack of availability of funds (World Food Programme, 2011).

Storage capacity remains weak and the government does not usually respond in any systematic way to price hikes.

**Ethiopia**

- Maize production in Ethiopia between 2008 and 2012 has been roughly been in the range of 3.9-5.4 MMT (USDA, 2012). Consumption has closely matched production levels with nearly no imports or exports in this five-year period.
- One characteristic feature of the Ethiopian maize market has been the volatility in retail prices of maize in comparison to wholesale prices. For instance, according to FAO GIEWS data, the average wholesale price increase between August 2007 and November

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\(^{12}\) Reasons cited were the quality of maize from Uganda and a relatively high import tariff price set by the NCPB.

\(^{13}\) Approximately, 75% nominal price increase on the Kampala market between January 2007 and July 2008.
2011 was 97.4% whereas the average retail price increase over the same period was close to 310%.

- It has been estimated that more than 80 percent of wholesale traders hold grain stocks for up to six months from harvest, with the expectation that prices will rise during lean seasons. (Note: this is old information (Dessalegn, et al., 1998) and may be obsolete).
- Historically, the Government of Ethiopia has maintained a tight control over grain markets, but it withdrew this control between 1999 and 2002.
- Currently, maize prices in the country are determined largely by market forces and institutional interventions to stabilize grain prices are limited to buffer stock handling by the Ethiopian Grain Trade Enterprise. The Enterprise has a storage capacity that accommodates only 18% of the total grain marketed every year and its operations have an insignificant impact on market prices (Tadesse and Guttormsen, 2010).
- In Ethiopia, most cereals are neither exportable nor importable. In the period 2008-2012, USDA/FAS data documented zero commercial imports of maize into Ethiopia. Cereals are non-tradable due to high costs of transporting cereals both from the main port in Djibouti to primary consumption areas and from the main production areas to the port. The only exceptions that were observed were during the 2001/02 food crisis and in 2008, when there were imports of cereals into the country. Between 2008 and 2010, Ethiopia also placed a ban on cereal exports.
- During 2005-08 the prices of food grains rose sharply in Ethiopia (156.62%). Local procurement by the World Food Programme (WFP) and procurement by the EGTE fell to almost zero and strategic grain reserves declined sharply to only 17 percent of the targeted level.

IV. Fertilizer Policies

Inorganic fertilizer is almost entirely an imported commodity in the four East African countries of interest here. As a result, high international fertilizer prices have caused major budgetary pressures for the governments of countries which aim to subsidize fertilizers for smallholder farmers. For example, the global price for urea fertilizer increased from $116.50/MT in January 2003 to $770/MT in August 2008, a nominal increase of 561 percent. In Sub-Saharan Africa actual retail prices of inorganic fertilizers are well above import prices due to the high costs of transporting bulky fertilizers. In Tanzania for instance, the retail price equals the CIF\(^{14}\) price plus 41% to cover additional in-country costs. While none of the countries explicitly control prices of fertilizers, almost all (with the exception of Uganda) provide fertilizer subsidies to farmers. In Tanzania and Kenya, the move to subsidization was motivated by high global fertilizer prices experienced since the early 2000’s.

\(^{14}\) Cost, Insurance and Freight
Table 4 below highlights key fertilizer policies in the four countries. Details follow in the policy notes below.

### Table 4: Key Fertilizer Policy Interventions in Four East African Countries

<table>
<thead>
<tr>
<th>Policy</th>
<th>Tanzania</th>
<th>Kenya</th>
<th>Uganda</th>
<th>Ethiopia</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Imports</strong></td>
<td>Liberalized, but an oligopoly of three large agribusiness companies</td>
<td>Liberalized; over 10 importers, but 4 largest importers control 85% of the market</td>
<td>Liberalized, but with small (5-7) number of importers. Half of annual imports are directly sourced by larger farmers.</td>
<td>Monopolistic import structure. AISE, a parastatal has been the sole importer since 2009.</td>
</tr>
<tr>
<td><strong>Price controls</strong></td>
<td>Retail-level price controls in 2003-2007. Since ended.</td>
<td>Abandoned price controls and import restrictions since 1993.</td>
<td>No price controls since the 1990’s.</td>
<td>No price controls since mid-1990s</td>
</tr>
</tbody>
</table>

**Tanzania**
- Total fertilizer use in Tanzania was 221,889 metric tons in 2010-2011 with an average application rate of 19.3 kg/ha, an amount which is much lower than the Abuja Declaration’s target of 50 kg/ha (World Bank, 2012).
- Most of the fertilizer used in the country is imported; imports are in the control of three large agribusiness companies.
- Even though the government does not impose any taxes or tariffs on fertilizers, fertilizer prices in the country are high. Small quantities of imports do not facilitate economies of scale, resulting in high unit shipping costs. Costs related to domestic distribution are also high. The World Bank estimated (in 2012) that retail prices in the country are 41% more than the cost of fertilizer imports.
- Like many African countries, fertilizer policy in Tanzania evolved from being highly state-controlled in the 1970’s and 1980’s to being largely liberalized in the 1990’s. The effect of subsidy removal in Tanzania was to reduce fertilizer use in the range of 25-40% (Minot, 2009).
- Since 2003, however, there has been a return of fertilizer subsidies in the country. Between 2003 and 2007, the Tanzanian government subsidized the transport of fertilizer to selected regions like the Southern Highlands. The aim was to facilitate fertilizer use in
remote areas. The subsidy was given to fertilizer wholesalers but to ensure that benefits are passed on to farmers, price controls were also instituted.

- There is documented evidence of price controls being ineffective at the farm level, of late delivery of fertilizers on account of budgetary uncertainties, and some leakage to neighboring countries, all of which created inefficiencies in the earlier program.
- From 2007 onwards, the Tanzanian government introduced the National Agricultural Input Voucher Scheme (NAIVS) to achieve multiple objectives with its fertilizer policy regime. The program began as a pilot in two districts in 2007 and is currently operational in 57 districts. The NAIVS is essentially a targeted policy wherein farmer households are selected as eligible on the basis of certain criteria. Three types of input vouchers are made available, including vouchers for: 1 bag of urea, 1 bag of DAP/Mijingu, and vouchers for improved maize or rice seed. The voucher is 50% of the price and the rest is paid by the farmer.
- The number of beneficiaries of NAIVS is estimated at 1.5-2.0 million. The program aims to target around 2.5 million households, amounting to around 45% of Tanzania’s smallholder farmers. The total cost of the program is estimated to be between US$100-150 million.
- The program has established a chain of Voucher Committees at the Regional, District and Village levels to oversee the allocation and distribution of vouchers. The vouchers are allocated specifically to high-potential maize and rice production regions and to areas where rice farmers have access to irrigation. The Village Voucher Committees (VVCs) are responsible for selecting beneficiaries.
- The program is considering too new for effective program evaluation of longer term outcomes but preliminary evidence shows that the current fertilizer subsidy system has not yet benefitted the ultimate target of the program — the smallholder farmer (Tanzania Daily News, 2012).

Kenya

- Kenya is among countries in Sub-Saharan Africa with high fertilizer use rates (around 70% of farmers use fertilizers), especially in comparison to its East African neighbors. In 2008-09, fertilizer consumption in Kenya was a little over 400,000 metric tons.
- Fertilizer is mainly an imported commodity in Kenya. Prior to its liberalization in 1993, imports were in the hands of two parastatals – the Kenya Farmers Association (KFA) and the Kenya National Trading Corporation Ltd. (KNTC). Even earlier, before 1980, KFA

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15 Criteria include: 1) A full-time farmer residing in the village, 2) Cultivating maize or rice, 3) Not more than 1.0 hectare of land, 4) Willing to use provided inputs on those crops, 4) Willing to follow recommended agricultural practices, and 5) Willing and able to co-finance the inputs purchased through the vouchers. Additionally, priority is given to i) female-headed households, and ii) households which didn’t use any or little fertilizer and improved seeds for targeted crops over the last five years.

16 DAP = Di-ammonium phosphate; Mijingu = rock phosphate fertilizer.
and KNTC mainly managed fertilizer procurement and distribution. From the 1980’s onwards, private entry into the fertilizer market was encouraged but the extent of private players remained less because licensing of private trade continued. Price controls and import quotas were also in place.

- In 1993, the government withdrew from the fertilizer market completely and abandoned price controls and import restrictions. Since liberalization, the number of fertilizer importers grew to 12 in 1996, and today the total number of fertilizer importers is estimated to be over 10, but with four major firms controlling 85% of the market.

- The liberalization of fertilizer markets and the subsequent establishment of a network of retailers are largely credited with the increased uptake of fertilizers in the country. In fact, the average distance to the nearest fertilizer retailer for small farmers decreased by more than half between 1997 and 2007 (Ariga and Jayne, 2009).

- In 2006, The Kenyan government initiated a National Accelerated Agriculture Input Access Project (NAAIP). Inputs under this program are distributed using a voucher system. The inputs under the project are at agreed price which is about 10% less than the market price. Selected farmers receive input vouchers from the government which they redeem at the nearest agro-dealer shop. The program was envisioned to last between 2006 and 2010, targeting 45,000 farmer households annually; in 2008, the government allocated US$ 4 million for the program’s annual budget.

- After the food price crisis struck in 2007-2008, fertilizer prices in Kenya more than doubled on account of higher world prices for fertilizers. In 2009 and 2010, the government imported more than 30,000 tons of fertilizer and distributed it to vulnerable farmers through private networks and NGOs at subsidized prices. In 2011, the government launched a KES 1.8 billion program to provide farmers with subsidized fertilizers.

Uganda

- The current level of fertilizer consumption in Uganda is very low; the market size is estimated to be around 16,000-20,000 tons annually. This is about 5 percent of Kenyan fertilizer consumption and 12 percent of fertilizer consumption in Ethiopia (FAOSTAT, 2010). Fertilizer application rates in the country are also among the lowest in the world at 1.8 kg/ha.

- Most inorganic fertilizers used in the country are imported and imports are liberalized. However, about half of Uganda’s annual fertilizer imports are imported directly by commercial crop growers; the commercial fertilizer supply system upon which the small-holder is dependent consists of about 5-7 importers (Namazzi, 2008).

- The road network in Uganda is weak and inefficient. The transport of bulky inorganic fertilizer – from wholesaler depots in Kenya or directly from international suppliers through the port of Mombasa – translates into high prices for farmers.
• In the 1970’s and 80’s, the Ugandan government was involved in major civil conflicts and was unable to create a basic market infrastructure for agricultural inputs. Thus when structural adjustment programs were implemented in the 1990’s, the scale of the fertilizer market did not grow (Yamano and Arai, 2010).

• Regarding the regulatory environment for fertilizer supplies, legislation pertaining to the importation, distribution, storage and marketing of agricultural chemicals also includes inorganic fertilizers, even though the risks posed by inorganic fertilizers have been globally documented to be much less significant. The regulations now in place require import permits and registration of individual fertilizer products from all international suppliers, resulting in a limited supply of inorganic fertilizer.

• Other supply constraints include foreign exchange shortages on account of an unstable Shilling, delays at entry points experienced by importers, and the use of expensive clearing agents at the ports.

• Information constraints with regards to fertilizer use and volatile agricultural output markets are the significant demand-side constraints in the fertilizer market (Korugyendo, Bayite-Kasule and Benson, 2011).

Ethiopia

• When measured in terms of quantity imported, fertilizer use in Ethiopia increased from 250,000 tons in 1995 to 400,000 tons in 2008. This growth of fertilizer consumption has been more rapid than the average for Sub-Saharan Africa over the same period (Spielman et al., 2011).

• However, in the five year period 2003-07, imports experienced substantial volatility on account of high and volatile international fertilizer prices. Fertilizer imports declined from 350,000 tons to 50,000 tons during 2002-03, increased to 400,000 tons in 2005 and then declined again to 275,000 tons in 2007. There was a return to normalcy during 2007-2008 (Spielman et al., 2011).

• Fertilizer use in Ethiopia remained low for more than two decades, from the 1970’s to the 1990’s, but accelerated beginning in the middle of the 1990’s when Ethiopia reformed its fertilizer policy and oriented it more towards a free market approach.

• Even though the fertilizer market was liberalized, the importation and distribution of fertilizers has remained largely monopolistic. A parastatal, the Agricultural Input Supply Enterprise (AISE), and two regional holding companies accounted for all fertilizer imports and distribution in 2001. Since 2009, the AISE has been the sole importer of fertilizer.

• The AISE has a majority share at the wholesale distribution level. The retail market is almost exclusively under the public sector and cooperative unions. As of 2004, the public sector accounted for over 70 percent of distribution, with private dealers accounting for only 7 percent of sales nationwide (Spielman, et al., 2011).
• Just after the reforms in the mid-1990s, the private sector entered the fertilizer market in Ethiopia but soon exited because of the difficulty of financing imports which was made harder by government requirements that fertilizer be imported in lots of 25,000 tons and that 100 percent of the value of the fertilizer be imported at the time a line of credit is opened.

• Currently, about 90 percent of fertilizers in Ethiopia are delivered on credit at below market interest or even zero interest. Regional governments in Ethiopia have also intervened in the fertilizer supply system and have initiated 100 percent credit guarantee schemes since 1994 (Yamano and Arai, 2010). There are concerns about how the government can sustain such an expensive fertilizer credit program.

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