High and Volatile Food Prices: Drivers and Impacts on Food Security in Eastern and Central Africa

by

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Executive Summary

Global food prices increased substantially between 2007 and 2008 but declined in the last half of 2008 and stabilized in 2009 only to begin surging again in 2010 to reach unprecedented peaks in February 2011. Indeed the recent price levels are the highest since the inception of the United Nation’s Food and Agriculture Organization (FAO) food price index (FPI) in 1990 suggesting a renewed food price crisis. On the other hand, domestic food prices within the ECA region defied international trends to remain persistently high throughout the period under review. As global food prices rose sharply and peaked in the first half of 2008, food prices within the ECA region increased too, but at lower rates. Furthermore, even though global commodity prices slumped in the second half of 2008 and stabilized throughout 2009, food prices within the ECA region remained high. In 2010 and 2011, food prices within the ECA region have continued to rise in tandem with world food price trends. This paper draws from several reports and briefs that have been prepared by the Regional Strategic Analysis and Knowledge Support System for Eastern and Central Africa (ReSAKSS-ECA) in collaboration with the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) in the last three years. It presents the results, major conclusions and recommendations from the analysis to provide information on the nature, content, causes, effects and implications of what has been called the global food price crisis in the context of the ECA region. Such information is useful for governments, donor agencies and other stakeholders concerned with addressing the food price crises, both in the short and long term.

A key result is that while the price rise involved most of the staple commodities including maize, rice, wheat, and meat, different countries in the ECA region exhibited different patterns and were affected differently. Among the countries considered in the analysis, the Food Price Index (FPI) rose fastest in Ethiopia and Kenya in that order. Uganda started experiencing a surge in the FPI in early 2010. Results also show that domestic prices are more volatile than global prices. The differing pattern between global and domestic prices is largely explained by the low transmission of global price changes to domestic markets, an indication of poor integration of ECA markets to international markets.

The factors behind the dramatic surge in global prices are varied and to a large extent remain contested. Many authors have argued that the overarching cause for the spike in global food prices was that demand had outstripped supply. However, recent evidence on the causes of the global food price crisis points to a combination of economic factors both on the supply and demand side. On the demand side, the combination of rising incomes in developing countries, increasing world population, rapid urbanization, changing diets and an ever increasing demand for biofuel products to cater for energy needs have been the driving forces behind the food price crisis. On the supply side, the combination of high agricultural input prices (especially fertilizers and fuel), climatic shocks, reduced world food stocks, reduced exports, underinvestment in agriculture and declining agricultural resources such as land and water have been associated with low supply of food commodities.

In the context of the ECA region, the food price crisis has been attributed to a combination of the global causes and other region specific factors. One of the dominant causes of the high food prices in the ECA region is a rapidly expanding population that has created a huge demand for food. Unfortunately, the region is characterized by low agricultural productivity that is partly attributed to
underinvestment in the sector, high input prices and recurrent droughts. As a result food supply has not expanded adequately to match the increased in food demand fueling an increase in prices. The ECA region specific causes of the food price crisis include unstable macroeconomic conditions, inappropriate trade policies, poor transmission of international prices to domestic markets, recurrent droughts, natural disasters and conflicts.

The high and volatile food prices have different effects on different countries and members of the community. It can deliver tremendous benefits to the farming communities and countries whose economies are dominated by agriculture. However such benefits accrue mainly to net-producing households or net-exporting countries. Commercial farmers, who can respond to the increase in prices by increasing production, can potentially benefit from the price boom provided that changes in the prices are transmitted to them through the value chain. Net exporting countries benefit by experiencing increased revenues from sales, and hence improved terms of trade. Despite these potential benefits of the surge in commodity prices, the high food prices have impoverished many small farmers in ECA countries and lead to household food insecurity as most farming households are net buyers of food. The surge in food prices has also adversely affected ECA economies, especially those of net food importing countries. Such countries face the threat of food price-induced inflation, large food import bills and deteriorating terms of trade that add to the problem of food insecurity at both the national and household levels. The food price situation has posed significant challenge to the achievement of the Millennium Development Goals within the ECA region, and in particular to the reduction of poverty and hunger.

The responses to the food price crisis reflect a diversity of sorts across countries in the ECA region. Overall, two interrelated categories of responses have been noted. First, international actions and policies that were advocated for by donors, and secondly country specific responses that were initiated by individual governments. Within the ECA region, the policy responses adopted are greatly varied but can be broadly classified into demand side and supply side policies. The most common responses broadly aim to ensure that there is an adequate and affordable food supply for the majority of consumers and that safety nets are provided for the most food insecure and vulnerable. They also aim at fostering a positive agricultural supply response.

The conventional consumption policies adopted to cushion consumers against the adverse effects of rising food prices in the ECA region included interventions such as food subsidies, food stamps, food for work projects, safety nets and tax reductions. On the other hand, the supply side policies implemented to increases food production revolved around release of food reserves, input subsidies and producer price support measures. In addition to the demand and supply side policies, several ECA countries adopted trade policies to cushion their producers and consumers. The most popular trade policy measures adopted to manage food price increases included import tariff reductions and the imposition of export taxes and export bans.

Given the many social problems that the food price crisis has created within the ECA region, this report recommends the adoption of both short-term and long-term policy measures. In the short-term, governments and donors within the ECA region can meet the food needs of the most vulnerable by the provision of emergency food aid, zero rating of duties on food imports, abolishing of price controls and export restrictions coupled with the adoption of food safety nets. In the long term, investing in smallholder agriculture is undoubtedly the most sustainable safety net for the ECA
region. The priority areas of agricultural investment should focus on increasing productivity and access to inputs and markets so that farmers are less vulnerable and more capable of responding to production incentives.

In the short-term, governments and donors within the ECA region can meet the food needs of the most vulnerable by pursuing the following demand and supply side policy measures;

- Provision of emergency food assistance – This can be achieved through the distribution of relief food by both donors and governments and the release of public (reserve?) stocks of food staples by governments
- Adoption of food safety nets to cushion the vulnerable against the adverse effects of the food price crisis (e.g. cash transfers, food stamps)
- The provision of agricultural inputs and services
- Abolishing price controls and export restrictions
- Adjustments in trade and tax policy measures
- Macro-economic policy management such as maintaining low inflation rates and reduction of domestic borrowing
- Investing in and strengthening the early warning and disaster management systems

In the long term, investing in smallholder agriculture is undoubtedly the most sustainable safety net for societies. The priority areas of investment that should be considered include:

- Investment in agricultural research to create a green revolution in Africa
- Investment in key agricultural services such as extension services, to ensure that the latest technologies are disseminated to farmers
- Investment in local infrastructure – irrigation, communications, power and transport. In particular there is a need to invest in the “last mile” rural roads – to ensure that what is produced by poor rural people can actually reach the markets and fetch a good price
- Investment in rural financial services, markets and linkages so that smallholder farmers can buy fertilizer and better seeds, gain more control over when and where to sell their produce, and insure themselves against risks such as drought
- Investment in agro-processing to add value to primary products and to reduce post-harvest losses and improve quality
- Enhance the ability of farmers to cope with effects of changing climate through research and supportive climate adaptation policies
Introduction and Historical Background

1.1 Overview
Over the last four years, global food prices have witnessed unprecedented increases. Indeed a marked increasing trend is discerned from around 2000 following a historical long term decline in real prices that ended around 1987. Global food prices reached the highest level on record in February 2011, surpassing levels seen at the height of the 2007/8 food crisis and the highest since the inception of the United Nation’s Food and Agriculture Organization (FAO) food price index (FPI) in 1990 to suggest a renewed food price crisis. Compared to 1990, the FPI rose by 32% in 2007, by 56% in 2008, and by 92% in 2011. Domestic food prices within the Eastern and Central African (ECA) countries exhibit a somewhat different pattern from that of the global food prices (Karugia, et al, 2009; Meijerink et al, 2009). While global food prices rose sharply and peaked in the first half of 2008, food prices within the ECA increased too, but at lower rates (Macharia et al, 2009). And although global commodity prices slumped in the second half of 2008 and stabilized throughout 2009, food prices within the ECA region defied the international food price trends and continued to increase. Domestic food prices in the ECA region remained relatively high in 2009 even as global food prices declined (Meijerinket al, 2009). In 2010 and 2011, food prices within the ECA region have continued to rise in tandem with global food price trends.

Evidently, the food price crisis has worsened an already bad food security situation in the ECA region. The rising food prices puts the ECA region at risk of a reversal in gains made towards the attainment of the millennium development goals on hunger and poverty. The impacts of the high food prices in the region are complicated by unstable macroeconomic conditions (such as exchange rate, monetary, and fiscal policies) that artificially keep food prices high. Furthermore, the impacts of food price crisis in the ECA region have been compounded by other regional factors such as persistent droughts and political conflicts such as those experienced in Zimbabwe, Kenya and Madagascar (Okello, 2009).

While there is ample information on the nature, content, causes, effects and implications of what has been called the global food price crisis, much less is known about the food price crisis within the context of the ECA region. Yet, such knowledge is important to prepare for the possibility of future “food price crises” within the region. Furthermore, the role of policy in precipitating rather than preventing the past and possible future food crises has been largely ignored. Given the limited information and understanding of the crisis in the context of the ECA region, the Regional Strategic Analysis and Knowledge Support System for Eastern and Central Africa (ReSAKSS-ECA) in collaboration with the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) has been tracking food prices and undertaking empirical evaluations of the price trends to generate information on the food price crisis in order to better understand the crisis in the context of the ECA region. Such information is useful for governments, donor agencies and other stakeholders concerned with addressing the food price crises, both in the short and long term.

This paper which draws from several reports and briefs that have been prepared by ReSAKSS in the last three years presents the results and major conclusions and recommendations from the analysis.
1.2 Methods

Data collection involved collation of secondary data on domestic monthly wholesale food prices as well as macro data on consumer price indices and exchange rates covering the period from January 2007 to July 2011. The main data sources were national sources such as statistical agencies, central banks, ministries of agriculture, and other government agencies. These were complemented with data from national and regional agricultural and trade initiatives such as the Regional Agricultural Trade Intelligence Network (RATIN). Additional data were sourced from FAOSTAT. While the focus is on countries in the ECA region, data limitations restrict the analysis to a few countries that include: Djibouti, Ethiopia, Kenya, Malawi, Rwanda, Tanzania, Uganda, and Zambia. The dominant farming system in all of these countries is a maize mixed system (Jayne et al, 2006). These countries exhibit similar food consumption patterns and have traditionally traded with each other, both informally and formally.

Trend analysis was undertaken to provide evidence of the behavior of food prices. The coefficient of variation was used as an indicator of price volatility. To understand the price transmission from world markets to domestic markets and among the domestic markets in ECA, a combination of qualitative and quantitative approaches was adopted. Since the current study focuses on the situation during the food price crisis (starting 2007 to 2011) emphasis is on assessing short-run price transmission effects among markets in the ECA region and between domestic and global markets. The price analysis adopted here includes some correlation analysis and comparison of proportional price changes as described in Dawe (2008). The correlation coefficient is estimated to test for integration of the domestic and global markets and also integration among domestic maize markets in the region. The Dawe approach involves comparison of world and domestic commodity prices expressed in real domestic currency terms and it is executed in three steps. First, nominal domestic prices are deflated using national consumer price indices and nominal world price is deflated using a real exchange rate (RER) that links the domestic currency with the US dollar. The RER is obtained by deflating the nominal exchange rate with a ratio of consumer price indices between the US and the domestic country. Second, quarterly average world and domestic prices expressed in real domestic currency terms were computed. Third, cumulative quarterly changes in world and domestic real prices are compared to determine the degree of price transmission between world and domestic markets. To control for seasonal factors, the last quarter of 2008 is compared with the last quarter of 2010. The last quarter of 2008 was used as the base period because it is the period when the global food prices had taken a downward trend and become relatively stable. This base period (last quarter of 2008) clearly shows a period when domestic and global food prices took different trends after the 2007-08 food price crisis. To account for inflation, the prices are expressed in real domestic currency terms. The analysis of price transmission effects focused on maize, the most important staple food in many countries in ECA (De Groote et al, 2002).

A Synthesis of the Current Food Price Situation

2.1 Comparing trends in global and domestic food price indices

The Food and Agriculture Organization of United Nations (FAO) data suggests that the global food price index (FPI) generally rose in the year 2007 and peaked in June 2008. Further, the global FPI remained low and stable after the food price crisis (Figure 1). The decline in global food prices after 2008 was primarily due to a strong supply response; bumper harvests in many parts of the world and a fall in demand as the world economy slowed down following the financial crunch of 2008. Domestic FPI in ECA region on the other hand continued to increase specifically in Kenya, Tanzania, Uganda, Ethiopia and Djibouti until the first half of 2009 (Wanjiku et al., 2011). Further, Macharia et al (2009) reported that although global food prices had embarked on a downward spiral by July 2008, prices in EA countries continued to defy the global downward trend and continued to increase
throughout 2008 and early 2009. The increasing trend in domestic food prices eased in the first half of 2010 in tandem with the global prices. However as predicted by Macharia et al, (2009) the easing of the upward trend presented only a very temporary, if any, relief to the food price crises facing individual countries in ECA. Food prices began to increase in the second half of 2010 and have continued to rise in 2011. The same is observed for the global food prices that took an upward trend in year 2010 increasing at an average rate of 4 percent between June and November 2010. According to the FAO, between July and August 2010, the FAO global FPI increased to its highest level since October 2008, but it was still 18 percent lower than its peak in June 2008 (FAO Media Centre, 2010). In August 2010, FAO reported that the sudden sharp rise in global wheat prices following drought in the Russian Federation and the country's subsequent restrictions on wheat sales contributed to an increase in global FPI. In addition, the drought experienced in Thailand in 2010 may have contributed to increased global food prices considering that Thailand is the world's largest rice exporter. The global FPI reached its highest ever peak in February 2011.

![Figure 1: A comparison of global and country food price indices](image)


Figure 1: A comparison of global and country food price indices

High and volatile prices continue to persist in 2011 in Eastern Africa countries. But there are differences in the way countries have been affected. Ethiopia’s FPI has remained the highest, above the other countries in ECA and above the global FPI since the first quarter of 2008. According to FEWS NET and WFP the primary causes for high food prices in Ethiopia are increased demand for food from urban population and climatic factors such as successive years of below average rainfall, and low agricultural production. A detailed comparison of the behavior of prices of individual commodities in different countries is presented the next section.

### 2.2 Comparing trends in prices of key staple crops and livestock products

Both global and domestic maize and wheat prices took a downward trend after the food price crisis (figure 2 and 3). Since then global maize and wheat prices have remained relatively low and stable.
with some increase in the last half of 2010, especially of wheat prices. On the other hand, maize and wheat domestic prices in ECA countries have remained high, volatile and above the global prices. During the last quarter of 2008, global maize prices dropped by 12% while domestic maize prices increased in domestic markets in the ECA countries covered in this study. In Kenya, Zambia, Ethiopia, Tanzania and Rwanda maize prices increased by 3%, 10%, 7%, 6% and 4% respectively. Further, analysis of the wheat prices shows a similar trend in the region with global wheat prices dropping by 7% but domestic prices increased by approximately 4% in both Kenya and Zambia during the last quarter of 2008. These trends show that domestic food prices rose faster than global prices, suggesting a weak relationship between international and domestic prices. The trends further confirm high price differentials among the countries in the EA region with food prices increasing at different rates and at different times among the countries. This suggests a role for intra-regional trade to buffer food price volatility in the region. High food prices in one country occasioned by shortages can be ameliorated by availability of food at low prices from another country.

The first quarter of 2010 experienced traces of declining maize prices in ECA (maize prices dropped by 7% in Kenya and by 2% in Uganda, Ethiopia and Tanzania). According to FAO, the slight decline in maize prices in 2010 in some countries in ECA region was due to increased production attributed to good weather conditions in maize producing zones. This favourable food production situation deteriorated in the first half of 2011 in Kenya which experienced la Nina phenomenon (prolonged dry spell) following which maize prices increased substantially.
The increase in global wheat prices observed in August 2010 is the largest month increase since January 2008. It was even higher than at the peak of the global food crisis in 2008 which was at its highest at 16 percent in the month of February 2008. According to the FAO, the sudden sharp rise in global wheat prices between July and August 2010 was due to a severe drought in the Russian Federation and the country’s subsequent restrictions on wheat sales through a ban on all grain exports. This scenario confirms the role of trade restrictions in increasing global food prices.

Global and domestic meat prices in selected ECA countries continue to increase. The increasing global prices of meat observed in year 2010 were as a result of tight supply in large exporting countries (Australia, Argentina and Uruguay) where there was a drought in year 2009 after which export restrictions were imposed. This decline in supply was coupled with improved demand after the reversal of the 2009 economic recession. In 2010 and the first half of 2011, various countries in ECA, especially Kenya, Ethiopia and Uganda experienced drought in livestock producing areas. The resultant deterioration of grazing resources, poor animal conditions, livestock mortality and migration may have triggered the high bovine meat prices due to reduced supply in the market.

Generally, the inadequately developed marketing infrastructure in ECA might partly explain the high price differentials among domestic markets. Improving marketing and transportation infrastructure has a big role to play in improving the integration of ECA regional markets.
The severity of high food prices is different in different countries and that the price of a commodity may display different behaviour in different countries in the region as also reflected by the trends analysis. For example, Figure 2 shows different behaviour of maize prices in Ethiopia and Rwanda with maize prices in Ethiopia remaining extremely high since year 2007. The high volatility of food prices in regional markets may also have been caused by the imposition of food trade restrictions such as export bans. Such bans increase uncertainties in markets and affect grain movement between markets.
2.4 Transmission among global and domestic food prices

Price transmission occurs when changes in the price of any given commodity in one place are similarly reflected in changes in prices in another place. This occurs if markets are efficient and policies are not an obstacle to their operation. This section analyses the integration of regional maize markets among themselves and the integration of regional markets to global markets. The section further assesses the extent to which changes in world maize prices have been passed through to domestic prices and the extent of price transmission among regional domestic maize markets.

Table 2 presents correlation coefficients between global and domestic maize prices. Correlation coefficients vary between -1 and 1. The closer to 1, the more correlated the prices are and the higher possibility that the markets are integrated. The coefficient of correlation is close to 0 when there is no link between the two sets of prices. Further, low correlation coefficients mean the markets are unconnected by actual movements of commodities from one market to another. The simple correlation coefficient is a popular measure of market integration because it is easy to implement. However, it masks the presence of other synchronous factors such as general price inflation, seasonality and procurement policy (Karugia, et al. 2004). It is therefore used here as an indicator of possible market integration but not a conclusive one. The results in Table 2 suggest insignificant correlation between global and most domestic maize markets in ECA a therefore a lack of integration between global and domestic markets.

Table 2: Correlation Coefficients between Global and Domestic Maize Prices – February -2007 to July 2011

<table>
<thead>
<tr>
<th>Country</th>
<th>Correlation Coefficients</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>0.32</td>
</tr>
<tr>
<td>Uganda</td>
<td>0.30</td>
</tr>
<tr>
<td>Tanzania</td>
<td>0.29</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>0.07</td>
</tr>
<tr>
<td>Rwanda</td>
<td>0.04</td>
</tr>
<tr>
<td>Zambia</td>
<td>-0.07</td>
</tr>
</tbody>
</table>

Data sources: FAO global: FAOSTAT; Kenya: Ministry of Agriculture; Ethiopia: Central statistics agency; Rwanda: RATIN; Uganda: Uganda Bureau of statistics; Tanzania: Bank of Tanzania

Table 3 presents correlation coefficients of prices in domestic maize markets. All correlation coefficients are positive suggesting that maize prices in various markets in ECA tend to move in the same direction with significant integration. Maize prices in Uganda and Kenya tend to be highly correlated. Some correlation is also observed between Uganda and Ethiopia maize markets, Kenya and Ethiopia maize markets, and also between Ethiopia and Tanzania maize markets. This implies that maize price changes in the region are likely to be transmitted across the borders to domestic markets in Uganda, Ethiopia, Tanzania and Kenya. Table 3 reports the highest correlation coefficient is between maize prices in Uganda and Kenya (0.89) closely followed by between Kenya and Ethiopia (0.79).

In general, the correlation coefficients between global and domestic maize markets were found to be lower than among the various domestic maize markets. This indicates that domestic markets have some degree of integration among themselves but no integration was noted between the...
domestic and global markets. Integrated markets play a crucial role in improving the food security situation of a given country or region. Where markets are well-integrated, price changes will cause the flow of food from surplus to deficit areas, food will flow from other markets where the prices are low to where prices are high reducing food shortages. These results highlight the importance of strengthening and implementing the regional approach articulated in COMESA and EAC treaties of addressing food security in the region. The potential of regional trade in addressing the persistently high food prices in the ECA region needs to be exploited.

Table 3: Correlation Coefficients between Domestic Maize Prices (Feb-2007 to July 2011)

<table>
<thead>
<tr>
<th></th>
<th>Uganda</th>
<th>Kenya</th>
<th>Tanzania</th>
<th>Rwanda</th>
<th>Ethiopia</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uganda</td>
<td>1</td>
<td>0.89*</td>
<td>0.52*</td>
<td>0.51*</td>
<td>0.67*</td>
</tr>
<tr>
<td>Kenya</td>
<td>1</td>
<td>0.72*</td>
<td>0.68*</td>
<td>0.79*</td>
<td></td>
</tr>
<tr>
<td>Tanzania</td>
<td></td>
<td>1</td>
<td>0.41*</td>
<td>0.67*</td>
<td>0.48*</td>
</tr>
<tr>
<td>Rwanda</td>
<td></td>
<td></td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethiopia</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1</td>
</tr>
</tbody>
</table>

Data source: FAO global: FAOSTAT; Kenya: Ministry of Agriculture; Ethiopia: Central statistics agency; Rwanda: RATIN; Uganda: Uganda Bureau of statistics; Tanzania: Bank of Tanzania
*significant at the 5% significance level

Price transmission effects were also assessed by comparing proportional changes in domestic maize prices against the global prices. Table 4 shows the cumulative percentage change in the world and domestic prices of maize expressed in real local currency terms between the last quarter of 2008 and the last quarter of 2010 for selected countries in ECA region. The results in Table 4 show that real US dollar world prices for maize decreased between the last quarter of 2008 and the last quarter of 2010. This confirms the downward trend of global maize prices after the food price crisis as earlier reported (see Figure 2). A comparison between columns (2) and (3) reflects the degree of price transmission between world and domestic markets; column (4) reflects the ratio between columns (3) and (2). According to Dawe, (2008) there is strong price transmission between the world prices and domestic prices when the ratio in column (4) is above 85% and a country is considered to be pursuing free trade policies (Dawe, 2008). The results show no price transmission for maize in all the countries with the exception of Uganda which reflects price transmission between Ugandan local markets and the global markets. This suggests that the observed decrease in the global price of maize has not passed on to domestic wholesale maize prices in most EA maize markets. The analysis implies that specific country polices are key determinants of domestic prices with little influence from global prices.
Table 4: Cumulative percentage changes in real global and domestic maize prices, between last quarter of 2008 and last quarter 2010

<table>
<thead>
<tr>
<th>Countries</th>
<th>Column (1) World price (US$)</th>
<th>Column (2) World price (DC)</th>
<th>Column (3) Domestic price (DC)</th>
<th>Column (4) (4) Pass through (%): (3)/(2)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Kenya</td>
<td>-203.16</td>
<td>-146.14</td>
<td>4.31</td>
<td>-2.95</td>
</tr>
<tr>
<td>Uganda</td>
<td>-203.16</td>
<td>-51.58</td>
<td>-133.13</td>
<td>258.13</td>
</tr>
<tr>
<td>Tanzania</td>
<td>-203.16</td>
<td>-185.82</td>
<td>5.75</td>
<td>-3.10</td>
</tr>
<tr>
<td>Ethiopia</td>
<td>-203.16</td>
<td>17736.91</td>
<td>825.86</td>
<td>4.66</td>
</tr>
<tr>
<td>Rwanda</td>
<td>-203.16</td>
<td>-57.66</td>
<td>-4.43</td>
<td>7.69</td>
</tr>
</tbody>
</table>

Data Source: FAO global: FAOSTAT; Kenya: Ministry of Agriculture; Ethiopia: Central statistics agency; Rwanda: RATIN; Uganda: Uganda Bureau of statistics; Tanzania: Bank of Tanzania

Proportional price changes between maize markets in EA was also analysed to understand price transmission effects among the domestic markets (Table 5). By comparing the quarterly changes (last quarter of 2008 and last quarter 2010), maize prices increased in Tanzania markets by about 6%, Kenyan markets by 4% and highly increased in Ethiopia markets by 826%. This large increase in maize prices in Ethiopia is attributed to drought in 2009, market distortions and increased demand in urban areas. Maize prices decreased in Uganda and Rwanda markets. The highest decrease was reported in Uganda (-133%). Uganda did not adopt any restrictions to trade thus formal and informal trade was freely exploited in the country. In addition maize is not a staple food in Uganda thus with good weather conditions, prices are likely to decline.

Maize markets that are likely to be significantly integrated based on a comparison of proportional price changes include markets in Uganda, Kenya, Tanzania and Ethiopia. The results in Table 5 support the results from the correlation analysis presented earlier. The cells show the degree of price transmission between markets. For example, only about 3.2% of a price change in Nairobi is reflected in price changes in Kampala. On the other hand, there is a strong transmission (3000%) of price changes from Kampala to the Nairobi market. This may reflect the direction of causality and magnitude of trade flows. The integration of maize markets can be strengthened by elimination of barriers that weaken market integration for example non-tariff barriers and trade restrictive policies. If the markets are well-integrated, the price changes will cause the flow of food from surplus to deficit areas.
Table 5: Cumulative percentage price change between first quarter of 2008 and last quarter 2010 –real domestic prices for maize

<table>
<thead>
<tr>
<th>Variables</th>
<th>Nairobi</th>
<th>Kampala</th>
<th>Dar</th>
<th>Addis</th>
<th>Kigali</th>
</tr>
</thead>
<tbody>
<tr>
<td>Price change (%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nairobi</td>
<td>4.31</td>
<td>-133.13</td>
<td>5.75</td>
<td>825.86</td>
<td>-4.43</td>
</tr>
<tr>
<td>Kampala</td>
<td>-3087.83</td>
<td>100.00</td>
<td>-2314.02</td>
<td>-16.12</td>
<td>3002.40</td>
</tr>
<tr>
<td>Dar</td>
<td>19154.29</td>
<td>-620.32</td>
<td>14354.19</td>
<td>100.00</td>
<td>-18624.34</td>
</tr>
<tr>
<td>Addis</td>
<td>133.44</td>
<td>-4.32</td>
<td>100.00</td>
<td>0.70</td>
<td>-129.75</td>
</tr>
<tr>
<td>Kigali</td>
<td>100.00</td>
<td>-3.24</td>
<td>74.94</td>
<td>0.52</td>
<td>-97.23</td>
</tr>
</tbody>
</table>

*Computation for pass through (%) of Nairobi’s price change relative to Kampala’s price change is -3.24 = (4.31/-133.13)*100

Data sources: RATIN (Kenya, Uganda, Tanzania, Rwanda); Central Statistics Agency (Ethiopia)

Causes of rising and volatile food prices
The factors behind the dramatic increase in global prices are varied and to a large extent remain contested. Many authors have argued that the overarching cause for the spike in international food prices was that demand had outstripped supply. However, the 2008-2009 decline in world food prices is not believed to have been caused simply by a fall in demand or an increase in supply, but rather a combination of other economic factors that suggest that the food crisis is not yet over. Most analysts support the argument that none of these factors in isolation would have caused the surge in food prices experienced in 2008. This section discusses the causes of the international food price crisis and explores their relevance in the context of the ECA region.

3.1 Demand Side Factors
On the demand side, the combination of rising incomes in developing countries, increasing world population, rapid urbanization, changing diets and an ever increasing demand for biofuel products to cater for energy needs have been the driving forces behind the food price crisis.

In the recent past, many developing countries have experienced high economic growth and continue to show strong sustained growth especially China and India. The sustained high economic growth rates have resulted to growth in household incomes, increasing the numbers of the middle class population and have largely contributed to the rise in food prices (Polaski, 2008). The growth in incomes is a key driver of change on the demand side of the world food equation. As consumer incomes increase, demand for meat, milk (and other dairy products) and eggs which are dependent on grains as feedstock rises. The increased consumption of livestock products is leading into increased demand for food grains for consumption, animal feeds, and industrial use. Rapid income growth in China has contributed to increased oilseed demand causing their prices to be higher as the country has been increasing soybean imports for its livestock and poultry industry (Mitchell, 2008).
Given the high dependence on food imports in the ECA region, the rising incomes in other parts of the world translate to increased food prices.

According to the United Nations 2008 World Population Prospects Report, the world population has expanded substantially over the last five decades. The rapid increase in population is generating demand for food, which does not match supply and is causing food prices to increase. This food consumption gap is exacerbated by the fact that the global population growth is postulated to continue until at least 2050 and projections indicate that this growth will mainly take place in developing countries. The rapid population growth implies that there are now more people to feed against very low food stocks, which exert pressure on world food supply leading to increases in food prices. Interestingly, most developing regions make up an ever increasing share of the world’s population at a time when growth in food production has been dismal. The hunger situation within the ECA region is complicated by the existence of internal disparities that make certain population categories vulnerable to price changes.

Over the last one century, a rapid urbanization has been witnessed throughout the world. This rapid urbanization has resulted in the growth of the population in the cities and other urban places. By the end of 2008 it was estimated that half of the world population would be living in urban areas (UN, 2008). The shifts in population patterns are bringing with them radical changes in food consumption patterns. Urbanized populations consume less basic staples and more processed foods and livestock products (Rosegrant et al., 2001). The rapid urbanization within the ECA region has been accompanied by an increased demand for livestock products. The rising demand for livestock products within the ECA region is thought to have important implications on the prices of beef and milk.

An increase in the production of biofuel is considered one of the demand-side factors that have contributed greatly to the rapid increase of food prices (Mitchell 2008; Valk, 2008). At least 100 million tonnes of food grains are converted to biofuel annually (Asian Development Bank, 2008). The extent of biofuel’s contribution to the increase in food production has however been controversial. The American government claims that biofuels are only responsible for an increase of 3 percent overall (Chakraborty, 2008). In contrast, the International Food Policy Research Institute (IFPRI), estimated that the demand for biofuel in the period 2000-2007 accounted for 30 percent of the weighted average increase of cereal prices (Von Braun et al, 2008). Others analysts such as Valk (2008) argue that even 30 percent is a conservative estimate.

The ECA countries are not involved in biofuel production and the effects on food prices could only be indirect through transmission of global food prices.

3.2 Supply Side Factors

On the supply side, the combination of high agricultural input prices (especially fertilizers and fuel), climatic shocks, reduced world food stocks, reduced exports, underinvestment in agriculture and declining agricultural resources such as land and water have been associated with low supply of food commodities. The low supply of food commodities implies that demand outstrips supply to cause increasing food prices.
The increasing international oil prices are driving up the costs of transportation, freight and processing of agricultural products. The high transport costs make international markets less attractive for bulk commodities such as staple grains. It has become more expensive to cultivate, fertilize and transport crops, leading some farmers to reduce production. The high oil prices have a spiral effect on the prices of fertilizers whose production is dependent on oil. To make matters worse, in response to the high food prices some countries, such as China, have enacted high export taxes on fertilizer to protect domestic farmers (Cha and McCrummen 2008).

In Africa, many farmers are incapable of responding to the high commodity prices because they lack access to input markets. As in the global scene, increasing prices of key agricultural inputs such as fertilizer, fuel for transportation are constraining supply response even as food prices increase in the ECA region. The high fertilizer prices are likely to reduce an already very low intensity of fertilizer use even further. The low fertilizer use intensity within the ECA region is further exacerbated by a poor physical infrastructure that constraints the distribution of both agricultural inputs and outputs. Thus, the high input prices within the ECA region limit food production and increase the prices of the available food commodities.

World cereal stocks in 2008 were 5.4 percent lower than their 2005 levels. The global wheat and coarse grain stocks were lower in 2008 than in 2005 at 15 and 4 percent respectively. Most of the decrease in food stocks resulted from reduced planting and adverse weather in some major producing and exporting countries such as Argentina, Australia, Canada, the EU, the United States, India, Pakistan, Thailand, and Viet Nam (FAO, 2009). Canada, Australia had more than 40 percent reduction on cereal stocks in 2008 as compared to the levels for 2005 while EU, Argentina and United States had more than 20 percent reduction. Other countries that experienced reductions include Morocco, Nigeria, Tunisia, South Africa, Russian and Syria. These food stocks are not expected to be fully replenished over the coming ten years, implying that tight markets may be a permanent factor in the period up to 2017 (OECD, 2008).

On the positive side, there were increases in cereal stocks over the same period in China, India, Pakistan, Philippines, Egypt and Tunisia at 17, 33, 33, 48, 32 and 58 percent respectively (FAO, 2009). In response to perceived food shortages, major food producer countries have imposed restrictions on grain exports. This has served to fuel price surges, a situation which is made worse when matched by importing countries seeking to purchase larger than normal volumes to build stockpiles (Von Braun, 2007).

However, food stocks within Sub-Saharan Africa increased by about 9 percent between 2005 and 2008 but have declined by 1 percent between 2008 and 2010 (FAO, 2009). The levels of stocks held by the African countries are quite low when compared to the stock levels in Asia. FAO has reported that 23 countries still face food shortages in the SSA. Six of these are from the ECA region namely; Burundi, DRC, Eritrea, Ethiopia, Kenya and Madagascar. The low levels of stocks in these ECA countries have important implications of the prices of food in the region.

Underinvestment in agriculture is one of the long term structural factors behind the food price crisis in Africa. Investments from both the public and private sectors to agriculture have been declining. Official development assistance (ODA) has been declining in the past two decades (World Bank, 2007; Karugia et al., 2008) and fell from 18 percent in 1980 to 4 percent of the total assistance in 2007 (Ngongi, 2008). At country level some countries in Africa have received very small proportions
for agricultural investment out of total ODA. The low level of public sector investment in agriculture has been a major limitation to agricultural growth in developing countries.

Countries in Sub-Saharan Africa invest 0.72 percent of their agricultural GDP in agricultural R&D as compared to 2.36 percent for developed countries in 2000 (World Bank, 2007). Low funding has also limited transfer and uptake of technologies that can increase productivity on existing land. Therefore, as demand has been increasing for food products, African countries have not been able to increase yields to match demand. Yet due to the policy and financial neglect, farmers in Africa have been unable to provide an adequate supply response (Ahmed, et al. 2008).

In cognizance of the low levels of investment on agriculture, African leaders committed to allocate at least 10 percent of their budgets to the sector by 2008 in what has been referred to as the Maputo declaration of 2003. However, only a few of the African countries have managed to meet that target. In ECA for example, only one country (Ethiopia) has managed to reach that target. Recently several countries have indicated a more positive trend toward more allocation of resources to the sector including Sudan, Tanzania, Uganda and Zambia. The low levels of investment in agriculture in the ECA region have undermined productivity, which limits the supply of food commodities. The low levels of food supply within the ECA region have not matched demand and are thought to be a major contributing factor to the rising food prices in the region.

It should however be noted that it is not only a matter of increasing budgetary allocations to agriculture; how the resources are used is equally, if not more important (ReSAKSS, 2007). Efficiency in the utilization of public resources is another issue that needs to be addressed. There is evidence of inefficient use of available resources across sub-sectors of agriculture and also across economic classifications in the ECA countries as it is the case in many other developing countries (Edmeades, 2007, Fan, Omilola and Lambert, 2009). In the majority of ECA countries very little resources are allocated to areas known to have high contribution to economic growth and poverty reduction such as in Research and Development (R&D) to enhance farm technology, irrigation, and rural infrastructure development (Lambert and Mac Neil, 2009, Diao et al, 2008).

Food production in the ECA region is further complicated by the scarcity of productive resources such as land and water. Most of the arable land is already under cultivation and this coupled with land resource degradation and competition with other uses implies limited land for food production, which portends low food production that cannot match demand and hence high food prices. Sub-Saharan Africa lags behind the rest of the world in the exploitation of potential irrigable land and its subsequent contribution to food supply. In order to increase food production, land under irrigation would have to be increased. However, this would have to done in the face of challenges of water scarcity and competing demand from an expanding urban sector. Among all developing regions of the world, Africa has the lowest per capita water availability (MacLean & Voss, 1996). Therefore, more efficient systems of irrigation would have to be adopted to ensure efficient water use.

While evidence of the impact of climate change on global food production is not conclusive, the verdict of the International Panel on Climate Change (IPCC) is that extreme weather events will make a big difference to world food security. The world is witnessing increasing uncertainty and variability in rainfall and droughts. Risk-averse farmers and support agents overestimate the negative impacts and are hence reluctant to invest and exploit the opportunities of average and good seasons, which makes them vulnerable to climate shocks. In relation to the recent food price crises in ECA, weather
variability, especially frequent droughts and foods have posed a significant problem in countries such as Kenya and Ethiopia.

Other important economic factors that have contributed to the food price crisis include speculation, dysfunctional markets and the financial crisis. Speculation is often cited as a cause of increasing world food prices, but it can also be a symptom. According to the FAO, speculation has at least contributed to the persistence and volatility of food prices (FAO, 2008). Other studies have pointed at another possible short-term supply side issue which attributes some current price volatility to speculative investors seeking safety in commodity markets from the weak American dollar and falling equity and bond markets (Evans, 2008). The recent international financial crisis contributed to falling world commodity prices, but this should not be seen as a sign that the food price crisis is over; rather, the two have become complexly intertwined in ways that have implications for food security and economic stability. Existence of dysfunctional markets is another important factor causing the increase in food prices in the ECA region. Domestic markets in the ECA region are small and fragmented with individual farmers selling small quantities of the same product at spot markets characterized by information asymmetries. There are considerable trade potentials associated with small markets and the phenomenon of staggered harvesting since surplus areas can supply food to deficit areas within and between countries. However, this potential is not fully exploited. In many ECA member countries, sub-regional and regional markets are poorly integrated due to infrastructure limitations and tariff and non-tariff barriers to trade. The existing market imperfections are complicated by the existence of trade barriers within the ECA region. These barriers are unpredictable and make it risky for trading firms to invest in developing durable marketing networks across the ECA region. They also impose transaction costs on investors and traders which results in lower demand and lower prices for farmers and higher prices for consumers. For instance, in reaction to rising food prices, Egypt, Tanzania, Kenya, Ethiopia, Malawi and Zambia imposed export restrictions in an attempt to shore up their own domestic supplies. The market imperfections reinforced by the existence of trade barriers have the effect of keeping food prices high within the ECA region.

Insecurity is another factor affecting the food security situation in the ECA region. This disrupts food supply (production and marketing). Several countries in the region are in conflicts or emerging from conflicts e.g., DRC, Sudan, Uganda, Ethiopia, Djibouti, parts of Kenya (in year 2007 in most of the country) and Zimbabwe. Over the years agricultural areas suitable for expansion of production have become limited. High agricultural potential areas in swathes of DRC, Southern Sudan and northern Uganda are not readily opened up due to conflicts. Besides providing facilities for human habitation, areas emerging from conflict will require basic infrastructure to support agricultural production. The insecurity situation worsens the food price situation and can be thought of as a regional casual factor of the high food prices.

Challenges of High and Volatile Food Prices in ECA
High and volatile prices pose serious challenges to countries, households and individuals. The effects of the food price crisis depends on a variety of factors: (i) the extent of international price transmission to domestic markets; (ii) the ability of farmers to respond to price incentives through increased production or investments in productivity; (iii) whether households (countries) are net
buyers (importers) or net sellers (exporters); (iv) household consumption patterns and the availability of other food options; (v) the share of household income devoted to food; and (vi) gender. This section discusses the impacts of the food price crisis on food security, economic growth and poverty reduction, natural resources, markets and trade, farmers’ welfare and gender.

4.1 Effects of the high and volatile food prices on food security

The food price crisis threatens the nutrition and food security status of the poor because they erode their already limited purchasing power (Von Braun, 2008). The poor in ECA spend about 50-70% of their income on food. This also affects most small scale farmers who are net buyers of food. In fact, the high international food prices of 2007 and early 2008 led to increases in the number of malnourished and pushed more people into poverty. The food price crisis is estimated to have largely contributed to the increase in the number of undernourished people worldwide from 848 million to 963 million between 2003–05 and 2008 (FAO, 2008). FAO estimates that in Africa, the proportion of undernourished people in Sub-Saharan Africa increased by 1 percent in 2007 due to the increased food prices (FAO, 2008). This is a change from the period 1995-97 and 2003-05 in which the proportion of undernourished decreased by 4 percent and only marginally increased, respectively (FAO, 2008).

Therefore, the recent food price situation has posed significant challenge to the achievement of the Millennium Development Goals (MDGs), and in particular to the reduction of poverty and hunger. Furthermore many countries in EA have faced unstable weather conditions in the form of floods (Uganda) and drought (Kenya) which have disrupted food production. Other factors including weak marketing institutions, poor road infrastructure in most EA countries have made the effects of food price increase even more severe.

4.2 Effects of the food price crisis on economic growth and poverty reduction

High food prices in COMESA region have the potential to affect economic growth by limiting farmers and governments from investing in agriculture or other productive investments due to the need to spend more resources to acquire food. The rising food prices have adversely affected economies of ECA countries, especially those that are net importers of food. A number of countries such as Kenya have experienced food price-induced inflation, large food import bills and deteriorating terms of trade that add to the problem of food insecurity at both the national and household levels. This is then likely to negatively affect the economies and reduce the gains in economic growth that have been achieved in the past decade by most countries in the region. The average real GDP growth rates for several countries in the ECA region increased between 2004 and 2008 but declined in year 2009 following the food price and financial crisis. The low economic growth is likely to have negative second-round effects for investment and productivity, with direct ramifications for food prices and food security (Von Braun, 2008).

The high food prices are likely to negatively affect progress in poverty reduction. The 2008 crisis elicited concerns that the rising food prices may completely eliminate gains made in poverty reduction over the preceding ten years (Valk, 2008; World Bank, 2008). The World Bank estimated that the 2008 crisis could push 100 million people into poverty, including 30 million in Africa. Minde et al, (2008) show that price increases of staple foods in Southern Africa may have resulted in 2 and 4.4 percent increases in poverty in Malawi and Zambia, respectively.
4.3 Effects of the food price crisis on natural resources
One of the most prominent global impacts of the food price crisis has been increased competition for land and water resources for agriculture, which has resulted in a revaluation of natural resources (Von Braun, 2008). As a result, farmland prices have increased and water resources have been overexploited.

In the ECA region, it was reported that exploitation of natural resources increased as people struggled to get food during the crisis. High prices of meat and meat products triggered poaching of wildlife and overfishing. Similarly, high food prices meant that the poor could not afford to pay for energy compelling them to encroach into forests for fuel wood. Others resorted into engaging in charcoal production, logging, sand mining and other environmentally destructive activities with the aim of generating extra cash to purchase food adding to the already alarming rates of deforestation and soil erosion. In the long run the food price crisis may lead to more deforestation and encroachment into protected areas as the poor who rely on subsistence farming might opt to expand the land under food production.

4.4 Effects of food price volatility on markets and trade
The high food prices have a particularly negative effect on trade for the African continent, which is a net food importer and spends about 20 billion dollars annually on food imports. For instance, 45 percent of rice and 85 percent of wheat consumed in Africa is imported. The high import bill leads to negative terms of trade for the majority of African countries. Within the ECA region, cross border trade in staple grains continues to flourish despite export bans imposed by various countries, e.g. Tanzania, Malawi, Zambia and Ethiopia. Most cross-border trade in ECA is informal and food commodities move from surplus to deficit areas at different times of the year.

4.5 Effects of the food price crisis on farmers welfare
The surge in food prices has different effects on different members of the community. It can deliver tremendous benefits to the farming communities and countries whose economies are dominated by agriculture. However such benefits accrue mainly to net producing households. Commercial farmers, who can respond to the increase in prices by increasing production, can potentially benefit from the price boom provided that changes in the prices are transmitted to them through the value chain. Net exporting countries benefit by experiencing increased revenues from sales, and thus improved terms of trade.

In some cases, poor farmers may be able to benefit from increased prices. In the short term, however, this will be rare because poor farmers are still generally net buyers of food (FAO, 2008). There is the possibility that increased food prices may encourage higher levels of production, which would increase agricultural wages thereby reducing poverty. In the short term the impact of soaring food prices on households depends crucially on their position on agricultural output and food markets as producers and consumers. Poor households that spend a large proportion of their income on tradable staple products are likely to be the ones whose overall welfare is worst affected.

Despite these potential benefits of the surge in commodity prices, high food prices impoverish many small farmers in developing countries and lead to household food insecurity as most farming households are net buyers of food. The surge in food prices adversely affects most developing country economies, especially those of net food importing countries. Such countries face the threat
of food price-induced inflation, large food import bills and deteriorating terms of trade that add to the problem of food insecurity at both the national and household levels. Therefore, the recent food price situation has posed significant challenge to the achievement of the Millennium Development Goals, and in particular to the reduction of poverty and hunger.

4.6 Gender dimensions of food price volatility

The impacts of the food price crisis are felt differently by men and women. Landless and female-headed households appear to be negatively affected by the food price crisis because they are almost always net-food buyers and lack the necessary resources, or access to those resources that would allow them to increase production in response to rising food prices (FAO 2008). Moreover, pregnant women and lactating mothers are severely affected by the rising food prices (FAO, 2008; Oxfam and Save the Children, 2008; UNICEF, 2009). Studies have indicated that even without the food price crisis, women tend to be more vulnerable to food insecurity than men due to several other factors (Coon, 2008; Freeman et al, 2008). The rising food prices would therefore worsen the food security status of food insecure women. Women are less able to cope with and overcome crises of various kinds because they have less access to and control over productive resources such as land, assets, transport and communication because of customary laws and social discrimination (Quisumbing, Meinzen-Dick and Bassett 2008; Coon, 2008; Freeman et al, 2008; Holmes, Jones and Marsden, 2009).

Women in Africa own only 1% of the land and also face biases against access to training, inputs, capital, credit and transportation (Holmes, Jones and Marsden, 2009). Estimates from recent studies suggest that women receive 7% of agricultural extension services and less than 10% of the credit offered to small-scale farmers (Bafinga, 2008 in Holmes, Jones and Marsden, 2009). Furthermore, time and labour constraints limit potential productivity on their own farms (Holmes, Jones and Marsden, 2009). A recent study conducted in Southern Africa (Malawi, Lesotho and Zambia) found that there are marked differences in ownership of productive assets, in livelihood strategies and vulnerability, including food insecurity between men and women (Freeman et al, 2008). The study noted that women, particularly the elderly, widowed and divorced women, and female-headed households, were disproportionately represented among vulnerable groups due to lack of key assets such as land and livestock, labour constraints to cultivate their fields, and non-existent or loss of supplementary income from a partner.

In addition to resource and assets constraints, women in Africa tend to be less educated than men and tend to have lower incomes. Across the ECA member states, the literacy rate for men in year 2007-2008 was higher than that of women. With lack of control and access to productive resources and assets, low education and income, women (especially the poor in urban and rural areas) in ECA are consequently more vulnerable to the effects of food price crisis. They are on the higher risk of being negatively affected by food price crisis, not only because they are primarily responsible for the management of food in the household but also because they are often the ones who buffer the impact of the crisis at the household level through decreased consumption (Holmes, Jones and Marsden, 2009). Furthermore, due to the gender roles of women in the ECA countries, rising prices can have repercussions for the entire household, as women face greater time constraints as they have to travel longer distances to find cheaper, but more labor-intensive, foods to prepare.
Opportunities of High Food Prices to ECA

While the high staple food prices in global and domestic markets pose considerable challenges in domestic economies of ECA countries, they also present a number of opportunities.

5.1 Effects on farmer welfare

Rising food prices have the potential to positively incentivize farmers and policymakers to invest in agricultural production and productivity. It should be recalled that during period of declining food prices in the 1980’s there was concern that the low prices were a disincentive for governments, donors and farmers to invest in agriculture. Increased food prices may encourage higher levels of production, which would increase agricultural wages thereby reducing poverty. Increased productivity of smallholders is good for growth and poverty reduction. These benefits are likely to be experienced by countries that are net food exporters and households that are net sellers of food. However, many countries in ECA are net importers of food while many small scale farmers in the region buy more food than they sell.

5.2 Effects on trade flows and regional integration

Trade flows from surplus to deficit areas are an important buffer for localized price surges and should be facilitated rather than impeded. Consequently, the food price crises have the potential to spur cross border trade within the ECA region between surplus and deficit areas. Such cross border trade would be prevalent in food staples such as cereals and tubers. Policies that improve the efficiency of trade would contribute significantly to food security in the region. Policies such as export tax or export bans should be avoided as they dampen incentives to producers and fuel speculation in the market.

Regional trade has the potential to not only reduce price volatility and food insecurity (Haggblade, 2008); it also has the potential to stimulate agricultural growth in production zones. However, trade barriers of various kinds, often imposed in an unpredictable manner, currently create a less than favourable investment climate for farmers and agribusinesses. Predictable trade policies that ensure cross-border market access are required to stimulate agricultural growth. In addition, public investments in production and marketing infrastructure, and agricultural support services are required in order to attract the private investments that are needed to commercialize food production and trade, enhance productivity and competitiveness, and foster regional integration.

5.3 Implications for investments in agriculture and world trade order

The recent rising and volatile food prices have refocused attention to agriculture and it now lies at the top of the international development agenda. As discussed below, the 2007/08 food price crisis elicited divergent responses from governments and the international development community to avert social instabilities. In response to the food crisis, an interactive dialogue regarding the appropriate measures followed. Overall, policy analysts, scientists and development partners agreed that policies and programs needed to be put in place to address the negative impacts of the global food price surges and to tap opportunities to spur progress in developing countries’ agriculture. Examples of these initiatives include:

- US$ 1.2 billion in additional assistance to the World Food Programme (WFP) to support its assistance programs in 62 countries worldwide affected by the food crisis.
- A reserve of US$ 100 million from The Central Emergency Response Fund (CERF), a humanitarian fund managed by Office for the Coordination of Humanitarian Affairs (OCHA) on
behalf of the wider humanitarian community, for food related emergency response projects (food, agriculture, health, nutrition, and logistics). US$ 65 million has already been allocated.

- Enhanced nutrition assessments and interventions through United Nations Children’s Fund (UNICEF’s) allocation of an additional US$ 50 million from its regular resources to its programs of cooperation with 41 developing countries facing nutrition insecurity among children and vulnerable groups.
- Procurement and distribution of seeds, fertilizers and other inputs in 54 countries under FAO’s Initiative on Soaring Food Prices (ISFP).
- Support from the International Fund for Agricultural Development (IFAD) for smallholder farmers to rapidly access inputs and related services through a reallocation of US$ 200 million, with programs in 14 countries that are being scaled up. In addition, under its ongoing investment portfolio, IFAD finances food production-related activities (crops, livestock and aquaculture) in 65 countries. It will further scale up and fast-track these activities upon countries’ request.
- US$ 1.2 billion of rapid financing for expansion of safety nets, agricultural input distribution, financing of critical imports, and budget support to countries impacted by the crisis through the World Bank Food Crisis Response Programme, together with 37 reprogramming of existing loans. Short term financing requirements for safety nets and agriculture (mainly assistance for seeds and fertilizers) in the 50 countries that were assessed by the World Bank are estimated at US$ 3.5 billion (about US$ 1 billion for safety net and budget support and US$ 2.5 billion for short-term support to agriculture). As of July 2008, support to a total of 26 countries has been agreed of which grant funding to ten highly vulnerable countries has already been or is in the process of being approved by the World Bank Board.
- Additional balance of payments support under the International Monetary Fund (IMF’s) existing Poverty Reduction and Growth Facilities (PRGF) in ten countries, amounting to US$ 180 million (as of July 7, 2008). Further increases are under discussion and likely in another four countries for about US$ 79 million. Discussions on additional financing are being held with several other countries. The IMF is also reviewing the modalities of its Exogenous Shocks Facility to enhance its accessibility to low-income countries facing additional balance of payments financing requirements.
- In addition, major pledges of support for agriculture have been made by the African Development Bank, Asian Development Bank, European Bank for Reconstruction and Development, Inter- American Development Bank, and the Islamic Development Bank as well as bilateral donors and NGOs.

The high food prices also offer a window of opportunity to make progress on the Doha Round of the world trade negotiations. From the perspective of high-income countries, the protection of farmers is no longer needed as prices are high. However, developing countries will need to protect (facilitate) their farmers from the effects (to take advantage) of rising food prices. Trade agreements lowering import tariffs would reduce the burden on consumers, for both developed and developing countries. The impact of the Doha Round on global agricultural trade and the current food price crisis would depend on the extent of trade liberalization in agricultural products by industrial and developing countries and the capacity of developing countries to respond to new market opportunities. COMESA, EAC and SADC should take the advantage presented by the high food prices to extract maximum benefits from the Doha round and other initiatives geared towards opening of markets for African exports.
Policy actions in response to the food price crisis

National governments responded to the 2008 world food crisis in several ways. In general, the focus of the national policy responses was on guaranteeing an adequate and affordable food supply for the majority of consumers, providing safety nets for the most food insecure and vulnerable and fostering agricultural supply response (Table 6). Measures related to food supply and food trade were the most popular responses and include increasing food supply, reducing tax and tariff on food, price controls and restricted exports. Tax reduction on food was implemented in 8 countries and the response can improve food security at short and long run especially for consumers who depend mostly on markets for their food supplies. Export bans on the other hand were implemented in 6 countries and may have helped in controlling domestic prices in the short run; however when imposed during times of shortage as was the case in year 2008 and 2009, the restriction does not stop trade as anticipated but increases the price of cross-border transaction costs. The control of food staple movement through export bans may translate to high volatility of the prices in regional markets as the restrictions increase the uncertainties of food staple movements between markets. Countries in EA region (Ethiopia, Kenya and Tanzania) maintained maize export bans throughout 2009 (FEWS NET, 2010a). This could explain why the food prices in EA region remained high even after the food price crisis exacerbating the food insecurity situation in EA region. Export bans in EA were coupled with traces of corruption which increase transfer cost and the cost is normally transferred to consumers increasing food prices (Okello, 2009). Currently the export bans have been lifted in Tanzania, Kenya and Ethiopia with the likelihood of opening up cross border trade. However the region is faced with numerous tariff and non-tariff barriers to trade, poor transport infrastructure, and lack of marketing information systems among others which are challenges to development of regional trade as they increase transaction costs and increase food prices.

Uganda government on the other hand did not impose any bans, quotas, or other restrictions on trade in food commodities (IFPRI, 2008b). Instead, Uganda focused on food tax reduction improving food security. Maize is not the staple food crop in Uganda and thus high maize prices would benefit farmers while not hurting consumers. Bananas are the staple food of Uganda which is a non-tradable commodity and thus Uganda is normally food secure with good rainfall.

Price control is another measure that was implemented by 5 countries in EA region. Price controls have a short term positive effect on lowering consumer prices, but a long term detrimental effect on farm gate prices. Kenya has gone through a regime of price controls (IRIN, 2010). The Kenyan government in November 2008 introduced consumer subsidies and price controls. Consequently the millers were able to buy maize at subsidized prices while consumers were to enjoy reduced and controlled prices for maize. The price controls in Kenya were associated with claims of manipulation, corruption and political interference (IRIN, 2010). February 2009, the Kenyan government removed the price subsidies for millers and price controls for consumers and the maize prices started rising again in year 2009. The following first half of 2010 saw maize prices in Kenya and some countries in EA region decline due to increased production attributed to good weather conditions which increased food access. The declining maize rice trend has since changed in the first half of 2011, where maize prices are reported to further increase. The maize prices thus in EA region are not only affected by the domestic policy per se but also by the climatic conditions.
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<th>Country</th>
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<th>Cash transfer for work and food for training</th>
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<th>School feeding</th>
<th>Increase supply using food grain stocks</th>
<th>Increase supply via imports</th>
<th>Reduce taxes on food</th>
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<th>Reduction of tariffs and custom fees on food imports</th>
<th>Restricted or banned export</th>
<th>Agricultural input subsidies</th>
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Consistent with longer run policies to improve food security

Some concerns relating to longer run food security
Likely to create problems for longer run food security depending on duration and targeting

Highly likely to create problems for longer run food security and/or create serious problems for neighbouring countries

Another popular policy measure consisted of increasing domestic food supply via the release of national food stocks. This was implemented by 4 countries. The Kenyan government through the National Cereals and produce Board (NCPB) released maize from the strategic reserves to stabilize market prices in year 2008. This release of maize in the market resulted in a significant reduction in stocks (Barasa, 2008) causing national food deficits and led to increasing maize prices. The private sector in Kenya including the millers moved in to import maize increasing food access. In Ethiopia, by early 2010, the government through Ethiopian Grain Trade Enterprise (EGTE) was still importing wheat as a measure to stabilize markets (FEWS NET, 2010b). However, by early 2010, most countries in EA benefited from reduced maize prices due to improved harvest associated to good rainfall. On the twist, first half of 2011 reported declining maize stocks and subsequent increasing prices.

Social safety net programmes were also other popular interventions implemented in EA region to help the vulnerable cope with the food price crisis and involved mainly food for work and food for training programmes which were implemented in 8 countries (Table 6). Other social safety net programmes implemented include food subsidies, cash transfer, food ration and school feeding programs. In 2005, the Government of Ethiopia initiated the Productive Safety Net Program (PSNP) in order to provide reliable and timely support to chronically food insecure households. The beneficiary households experienced a significant improvement in food security. Safety Net Programs are still running in Ethiopia and Kenya (cash transfer and food ration programs in Northern Kenya due to current drought).

School feeding program were implemented in 6 countries and this school program encourage students from poor families to keep going to school and also helps to discourage parents from taking their children out of school to work. School feeding program existed even before the food price crisis in some countries (Kenya and Ethiopia) and is still currently running in some schools in Kenya.

Table 6 also shows that measures aimed at increasing agricultural production were implemented by very few countries in the region despite being paramount in improving food security at long run. To enhance agricultural production, policies are required to lower production costs by availing agricultural input subsidies. However, high input prices mainly fertilizer and transportation costs in EA region dampen producers’ ability to increase output even in the face of rising output prices. The government of Kenya adopted a fertilizer subsidy which has been reported to boost Agricultural production (Levine, 2010). However the poor transport system and increasing fuel prices have resulted in sharp and significant increase in fertilizer prices.

The governments in EA region mainly resorted to short term price oriented policies that reduced prices for consumers with minimal attention given to policies aimed at stabilization of prices and markets. This explains the persisting volatile prices. Most governments did not give much attention to interventions aimed at increasing domestic food production by triggering supply response to the crisis. Farmers did receive from the high prices but also faced high production costs due to high input costs. Despite the various policy actions adopted in EA region to curb rising food prices, the region has continued to experience persistent high and volatile food prices. Other regional factors especially climate may have impacted on the food price crisis.
Future Directions and Recommendations

Despite the various policy actions adopted in ECA region to curb rising food prices, the region has continued to experience persistent high and volatile food prices implying that policies may not have been effective. The analysis presented in this paper indicates poor integration of domestic markets to global markets with weak integration among the domestic markets in the region. Countries in ECA are affected differently by global price surges. The severity of the impacts of high food prices is different in different countries and varies with seasons. This establishes a case for regionally coordinated responses to exploit regional diversity. A regional approach benefits from the food deficits and surpluses which exist simultaneously in different countries in the region. Policy actions for exploitation of this regional diversity should aim at facilitating regional trade, enhancing regional market information and intelligence systems, and promoting innovations to reduce costs of inputs by exploiting economies of scale in procurement of agricultural inputs. Improvements in regional market information and intelligence systems would go a long way in enhancing regional trade.

Given the many social problems that the current food price crisis has created within the ECA region, this report recommends the adoption of both short to medium-term coping strategies and long-term surveillance measures by governments, donors and farmers. The short-term coping strategies protect the poor without distorting the domestic food economy. On the other hand, the long-term “resilience” measures allow farmers to take advantage of production incentives while also stabilizing the economy to prevent vulnerability to future crises and price variability.

7.1 Short-term coping strategies

In the short-term, governments and donors within the ECA region can meet the food needs of the most vulnerable by pursuing the following demand and supply side policy measures;

- Provision of emergency food assistance – This can be achieved through the distribution of relief food by both donors and governments and the release of public (reserve?) stocks of food staples by governments
- Adoption of food safety nets to cushion the vulnerable against the adverse effects of the food price crisis (e.g. cash transfers, food stamps)
- The provision of agricultural inputs and services
- Abolishing price controls and export restrictions
- Adjustments in trade and tax policy measures
- Macro-economic policy management such as maintaining low inflation rates and reduction of domestic borrowing
- Investing in and strengthening the early warning and disaster management systems

7.2 Long-term resilience measures

In the long term, investing in smallholder agriculture is undoubtedly the most sustainable safety net for societies. The priority areas of investment that should be considered include:

- Investment in agricultural research to create a green revolution in Africa.
- Investment in key agricultural services such as extension services, to ensure that the latest technologies are disseminated to farmers
- Investment in local infrastructure – irrigation, communications, power and transport. In particular there is a need to invest in the “last mile” rural roads – to ensure that what is produced by poor rural people can actually reach the markets and fetch a good price
• Investment in rural financial services, markets and linkages so that smallholder farmers can buy fertilizer and better seeds, gain more control over when and where to sell their produce, and insure themselves against risks such as drought
• Investment in agro-processing to add value to primary products and to reduce post-harvest losses and improve quality
• Enhance the ability of farmers to cope with effects of changing climate through research and supportive climate adaptation policies
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