



# **Responding to the food price crisis in Eastern and Southern Africa: Policy options for national and regional action**

**Draft**



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## **1. Introduction**

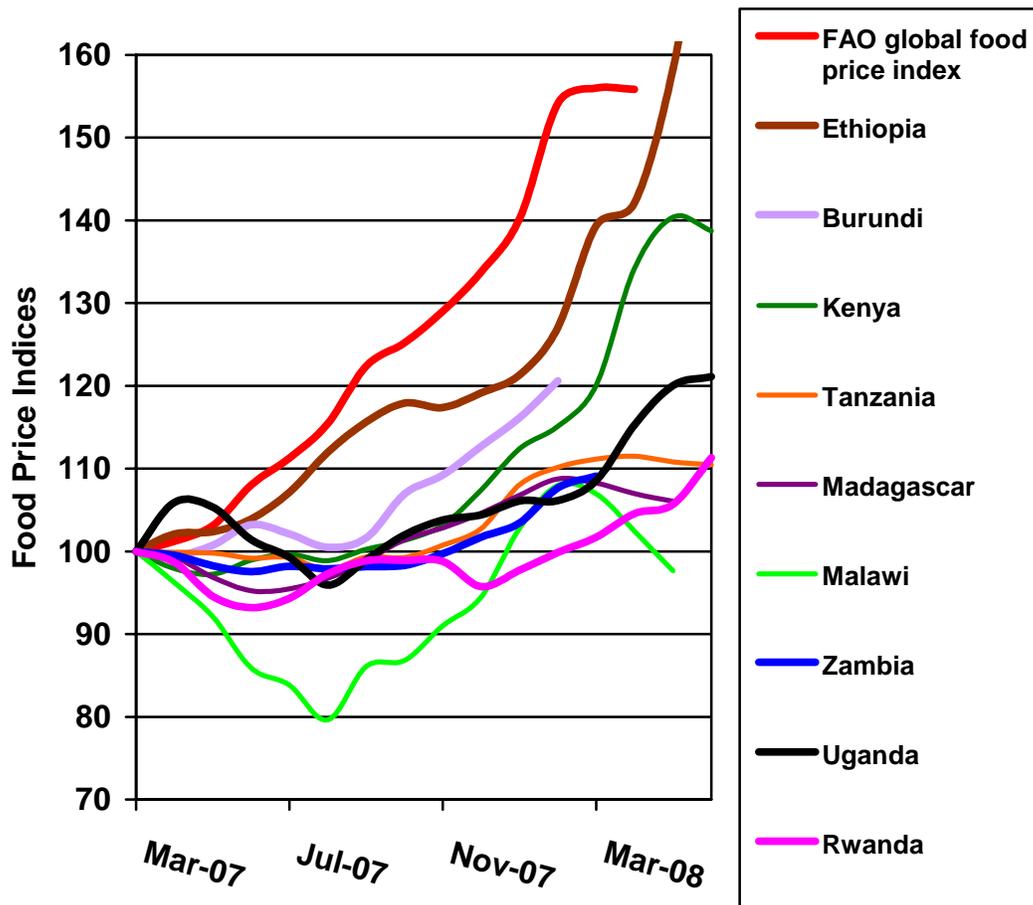
Global food prices have increased at unprecedented rates in the last two years and they are projected to continue doing so into the foreseeable future. The Food and Agriculture Organization of the United Nations (FAO) food price index (FPI) increased by 56% between March 2007 and March 2008 (Figure 1). Unlike in the past where prices of only a few commodities have been affected, the recent price surge has affected most food commodities. Prices of most of the world's key cereals, oilseeds, dairy products and meat have increased substantially. Rising food prices have had adverse effects in many countries, with significant hunger, poverty and macro-economic implications. Urgent and coordinated action is required at country, region, and international levels focusing not only on urgent short-term responses but also on comprehensive medium- to long-term solutions.

This paper addresses the magnitude and implications of food price changes in national and regional markets in Eastern and Southern Africa (ESA) with a view to provide the evidence base for effective policy action. Specifically, the paper:

- Analyses trends and outlook in country and regional data, presents evidence on the regional food situation, and explores the nexus between high domestic food prices and global food prices.
- Highlights regional and national dimensions of food price increases and how they are related to food security in the region.
- Provides practical short-, medium- and long-term options for governments and other stakeholders for addressing the problem posed by the food price crisis.

## **2. Drivers of global food price increases**

A number of demand side and supply side factors have been identified as the key drivers of the current surge in global food prices. The key factors responsible for increasing demand for food are rising incomes, growing uses of food grains for biofuel production and animal feed, increasing world population, and urbanization. On the supply side, high agricultural input prices (especially fertilizers and fuel), reduced world stocks, reduced exports, and declining agricultural resources have been associated with low supply of food commodities.



Sources: FAO (2008a); Ethiopia Central Statistical Agency (2008a); Institute of Statistics and Economic Studies of Burundi, 2008; Central Bank of Burundi, 2008; Central Bank of Kenya (2007); Kenya National Bureau of Statistics (2008); Tanzania National Bureau of Statistics (2008); Central Bank of Madagascar (2008); National Statistical Office of Malawi (2008); Central Statistical Office of Zambia, 2008; Uganda Bureau of Statistics (2008a); National Institute of Statistics of Rwanda (NISR) and Ministry of Finance and Economic Planning (2008)

**Figure 1. : Evolution of global Food Price Index and Food Price Indices of selected ESA countries**

Many developing countries have experienced high economic growth in recent years. Developing countries in Asia, especially China and India, continue to show strong sustained growth. Real gross domestic product (GDP) in the region increased by 9% per annum between 2004 and 2006. Sub-Saharan Africa also experienced rapid economic growth, with many countries reporting economic growth of about 6% per annum in the same period. This growth in incomes is a key driver of change on the demand side of the world food equation. The rise in incomes is contributing to changes in preferences towards high value commodities such as vegetables, fruits and livestock products. For example, per capita demand for meat and dairy products has been rising steadily over the past two decades in China and India with increasing incomes. This rise in demand for animal

products is further fuelling the demand for staple grains to supply animal feeds, and hence is contributing to rising grain prices.

Moreover, increasing oil prices have led some countries to divert grain to the production of biofuels, further fuelling the rapidly rising grain prices. In the USA, which supplies more than 60% of world maize exports, a quarter of the maize crop (11% of the global crop) went into biofuel production in 2008. The country is spending US\$ 7 billion a year supporting ethanol which consumes 20% of American corn. The European Union (EU) has set a target of 10% of its transport fuel to come from biofuels by 2020 (Evans, 2008). Available evidence shows that the demand for biofuels will probably rise. Notably, the USA—one of more than 20 countries to require the use of biofuels—passed a law in December 2007 requiring use of 15 billion gallons of ethanol by 2015, more than double the current level.

Global population growth is postulated to continue until at least 2050 and this growth will mainly take place in developing countries. Concurrently, urbanization is advancing rapidly. It is estimated that half of the world population will live in urban areas by 2050. The rapid population growth implies that there are now more people to feed while the shifts in population patterns are bringing with them radical changes in food demand and consumption patterns. These demographic changes are likely to sustain high food prices over the long run.

Food supply depends on production and availability of stocks. World cereal production in 2006 was about 2 billion tonnes which is 2.4% less than it was in 2005. Most of the decrease is the result of reduced planting and adverse weather in some major producing and exporting countries. Between 2004 and 2006, wheat and maize production in the EU and the USA decreased by between 12% and 16%. On the positive side, coarse grain production in China increased by 12% and rice output in India increased by 9% over the same period. In 2007, world cereal production was expected to rise by almost 6% due to sharp increases in the production of maize, the main coarse grain. In 2006, global cereal stocks—especially those of wheat—were at their lowest levels since the early 1980s. Stocks in China, which constitute about 40% of total stocks, declined by approximately 50% between 2000 and 2004 and have not recovered in recent years. End-year cereal stocks in 2007 were expected to remain at 2006 levels. As opposed to cereals, the production of high-value agricultural commodities such as vegetables, fruits, meat and milk is growing rapidly in developing countries. In response to perceived food shortages, important food producers 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).

Globally, scarcity of resources suitable for agricultural production is beginning to have an effect on food supply. Rising oil prices mean increased costs of fertilizers and transport. Similarly, most of the arable land is already under cultivation and this coupled with land resource degradation and competition with other uses means that availability of land for agricultural production is nearing its limit. In Asia, for example, less and less water is available for irrigation. 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 forces them to remain vulnerable to climate shocks. 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).

In the face of globalization, it is unlikely that countries in ESA would be spared the effects of increasing global food prices. Per capita incomes have been increasing in recent years in most ESA countries. Even countries, such as Ethiopia, Tanzania and Zambia with high incidence and prevalence of hunger reported strong growth rates. While this growth needs to be increased and sustained if meaningful gains are to be made in hunger and poverty reduction, rising food prices would erode all the gains made in the recent past. For poor people in ESA, higher food prices can be devastating because it reduces their purchasing power and ability to buy food. Economic growth and development would be undermined in the face of inflationary pressure and unsustainable food import bills. On the positive side, farmers' incomes may increase and this could raise incentives for increased productivity if the high prices are transmitted to farm level. Yet there is little information on how the global food price situation is playing itself out at the country and the regional level in ESA. The popular media is full of graphic stories of the looming food crisis and policy makers in the region are under intense pressure to act to stem such a crisis. Some of the key questions high in the minds of policy makers are: What is happening to food prices in their countries and at the regional level? How similar or different is the food price situation in the region from what is being experienced globally? What unique features of the food situation in ESA provide policy makers with leverage to take action to address or avert the food price crisis as it plays itself out in the global scene? These questions need urgent answers in order to develop comprehensive actions to address high food prices.

This report makes the case that in the short term the rapid price increases are causing enormous stress for the urban and rural poor in regions dependent on food imports. Net food-importing, low-income countries are struggling to pay their food import bills, which diverts money from other needed investments. In some countries, the World Bank fears that increases in food prices will cancel gains made in recent years to alleviate poverty (World Bank 2008a). The World Food Programme (WFP) worries that higher food prices threaten not only the poor's access to food, but also to health and education. With renewed support to agriculture following growing interest in the sector in the recent past, the crisis presents a range of opportunities that if properly harnessed could not only reduce the threat of looming crisis but also offer a platform for accelerated regional integration and growth. After decades of low prices, this increase should be good news for farmers and countries that produce agricultural products. In the medium to long term higher prices can bring some benefits, but the necessary ingredients to support harnessing of these benefits must be in place.

### **3. Approach**

This study brings a range of national, regional and international expertise to bear on the questions posed above so as to provide the evidence base for policy actions to address the food crisis in ESA. While countries may find it in their interest to act individually to address the crisis, the study argues that there is considerable scope for ESA to act under the auspices of regional economic communities (RECs) such as the East African Community (EAC), the Common Market for Eastern and Southern Africa (COMESA) and the Southern Africa Development Community (SADC) to overcome the challenges posed by the global food price crisis and exploit the opportunities that the high prices may present.

Our approach involved assembling a range of secondary data on domestic food prices in a number of countries in the ESA region. Expert consultations were conducted to assess the quality and consistency of different data sets. Both aggregate price data (such as the consumer price indices and food price indices) and individual agricultural commodity price data were collected. In addition, data on production, consumption and trade flows were assembled. The main data sources were public sources such as publications of statistical agencies, central banks and ministries of agriculture. Others were FAO, the African Development Bank (AfDB), COMESA, and the Regional Agricultural Trade Intelligence Network (RATIN).

Trend analysis was undertaken to provide evidence of the behaviour of food prices in ESA. Correlation analysis was used to explore association between international and domestic food prices.

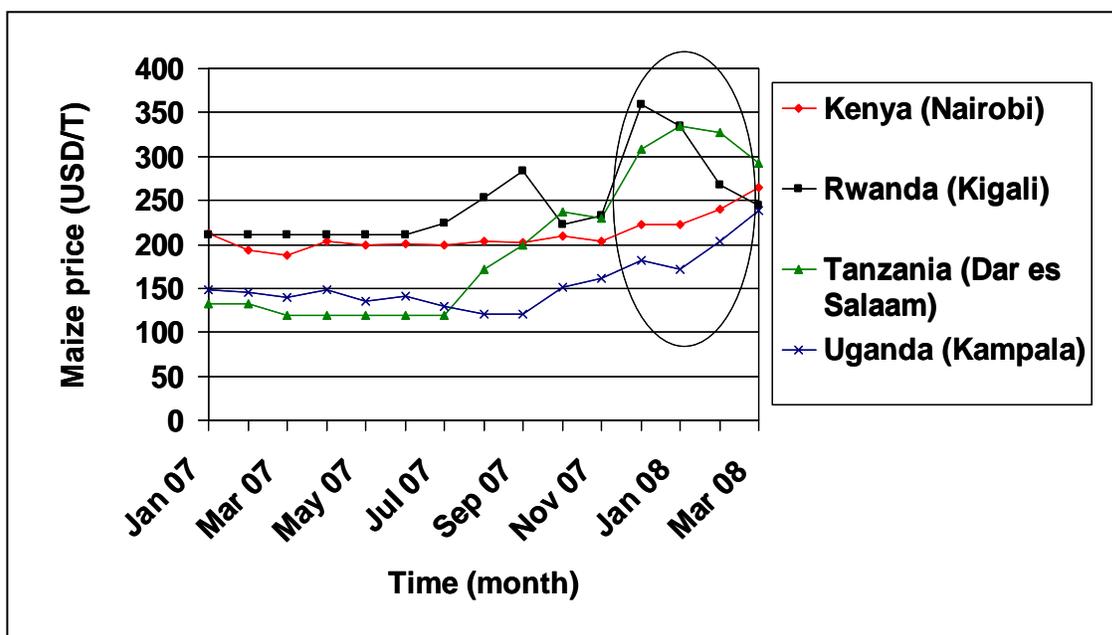
In addition to the analytical work, consultations were held with key experts and partners representing government policy advisors, policy think tanks, researchers, private sector and emergency relief agencies in a number of meetings in the region. The feedback from these meetings was used to refine the findings and policy actions identified in the paper.

## **4. What is the food situation in ESA?**

### ***4.1 Food price behaviour***

The universal indicator for price changes is the consumer price index (CPI). CPI is a measure of inflation and it includes indices for goods and services. Between January 2007 and March 2008, CPI in Burundi, Ethiopia, Kenya, Malawi and Tanzania show upward trends with higher increases from mid-2007. However, there are significant differences among countries with inflation being higher in Ethiopia and Kenya than in the other countries. The FPI, which captures trends in major food commodities for most countries in the region, forms over 50% of the CPI and has been growing at higher rates in Ethiopia, Kenya and Tanzania (Annex Figure 1). These trends seem to confirm the perception that

food prices are on the rise in several countries and the increase accounts for a substantial part of the total inflation. Prices of key commodities show similar trends. A glimpse of price trends of maize in the urban cities shows that prices have been on an upward swing since mid-2007, but shot up significantly from December 2007 (Figure 2). The same trends have been observed for meat in Zambia (Annex Figure 2), and wheat, rice and teff in Ethiopia (Annex Figure 3). Price surges occur at different times of the year even for the same commodity in different countries (Annex Figure 4).



Source: RATIN (2008a).

**Figure 2. Evolution of maize prices for selected ESA cities.**

Domestic food prices are much more volatile than the corresponding global prices (Table 1). For example, the coefficient of variation of domestic prices of maize in Kigali, Dar es Salaam and Kampala is significantly greater than the coefficient of variation of the international price (in this case represented by the Maize US no. 2). The staggered price peaks in the region and high volatility is associated with the poor integration of regional markets, not only amongst themselves but also to the international markets.

**Table 1. Volatility of international and domestic maize prices**

	Coefficient of variation (%)
Maize (US no. 2)	14.44
Nairobi (Kenya)	9.46
Kigali (Rwanda)	16.78
Dar es Salaam (Tanzania)	42.63
Kampala (Uganda)	20.56

Source: FAO (2008b), RATIN (2008a)

The pattern of price changes shows that countries in ESA are affected differently by the price surges, i.e. the severity of the problem is different in different countries and different commodities are important in contributing to inflation in different countries. Even in neighbouring countries it is observed that the price of a commodity may display different behaviour.

One of the key issues that this price behaviour raises regards the extent to which changes in global prices are transmitted to domestic markets. Price transmission effects provide insights into the nexus between domestic and international food prices. They indicate the extent to which domestic markets are integrated into global markets and therefore the degree to which changes in global prices might influence domestic prices. This information is important for guiding policy makers on whether to look for solutions to address the food price problem at the domestic, regional or global level.

While recognizing that food price indices do not necessarily comprise the same food basket, one can use their relationships to infer the extent to which world food prices are associated with domestic food prices. This would certainly be the case if there is strong substitutability among food commodities and prices are transmitted to domestic markets. Between March 2007 and March 2008, the FAO FPI jumped 56% (Figure 1). In the same period, the FPI increased by 39% in Ethiopia, 20% in Kenya and Burundi and 11% in Tanzania. In several other countries in ESA including Rwanda, Zambia, Uganda, Malawi and Madagascar, the increase was less than 10%, suggesting a weak association between global food prices and domestic food prices in many countries in ESA. This could be explained partly by the fact that the price indices comprise different food items.

To overcome anomalies arising from countries having different food baskets in the FPI, prices of key tradeable and non-tradeable staples were considered. Price transmission effects are inferred from the correlation coefficients between the global prices of maize, rice and wheat and domestic prices in selected ESA countries. The global prices are expressed in local currency to remove the effect of exchange rate appreciation of the domestic currency versus the US dollar. The results show that world market prices are correlated with maize prices in Zambia and Tanzania and much less so in Kenya, Uganda and Rwanda (Table 2). World rice prices show a much closer association with domestic prices in Tanzania and clearly no association with prices in Uganda. World market prices for wheat show a close association with domestic prices in Kenya and Zambia. For Rwanda and Zambia, the two countries where data for vegetable oil were available, domestic prices are highly correlated with world prices. World prices of livestock products (meat and dairy) do not show a significant association with domestic prices except in the case of Rwanda (meat) and Uganda (milk).

These results suggest that the level of import dependence is driving price transmission from global to domestic markets. ESA countries depend on the world market for vegetable oil, rice and wheat supplies and price transmission effects are stronger with a one to three-month time lag perhaps reflecting the time required to transport supplies to local markets. This is not the same case with maize, for which regional trade, both formal and informal, is significant.

**Table 2. Correlation coefficients between world and domestic prices in selected countries**

		Kenya	Uganda	Zambia	Tanzania	Rwanda
Maize	No lag	0.38	0.51	0.92	0.88	0.32
	1-month lag	0.11	0.27	0.83	0.80	0.19
	2-month lag	-0.11	0.23	0.59	0.65	-0.14
	3-month lag	-0.10	-0.04	0.17	0.42	-0.36
Rice	No lag	-	-0.01	-	0.90	0.44
	1-month lag	-	0.05	-	0.93	0.43
	2-month lag	-	0.11	-	0.91	0.43
	3-month lag	-	0.13	-	0.96	0.45
Wheat	No lag	0.73	-	0.48	-	-0.53
	1-month lag	0.80	-	0.53	-	-0.60
	2-month lag	0.83	-	0.80	-	-0.62
	3-month lag	0.81	-	0.89	-	-0.59
Vegetable oil	No lag	-	-	0.95	-	0.978
	1-month lag	-	-	0.89	-	0.983
	2-month lag	-	-	0.82	-	0.978
	3-month lag	-	-	0.74	-	0.979
Bovine meat	No lag	-	0.41	-0.44	-	0.70
	1-month lag	-	0.46	-0.53	-	-0.50
	2-month lag	-	0.15	-0.67	-	0.74
	3-month lag	-	-0.17	-0.71	-	0.62
Poultry	No lag	-	-0.15	-0.05	-	-
	1-month lag	-	-0.33	0.19	-	-
	2-month lag	-	-0.48	0.25	-	-
	3-month lag	-	-0.60	0.15	-	-
Milk (powdered)	No lag	0.00	0.87	-	-	0.23
	1-month lag	0.00	0.70	-	-	0.43
	2-month lag	-	0.74	-	-	0.48
	3-month lag	-	0.76	-	-	0.59

Sources: FAO (2008b); Ministry of Agriculture of Kenya (2008); Uganda Bureau of Statistics (2008a); Central Statistical Office of Zambia (2008); Tanzania Chamber of Commerce, Industry & Agriculture (2008); Ministry of Agriculture and Animal Resources for Rwanda (2007-2008).

Further evidence of the different effects of international food prices on countries and the tenuous association between international and domestic prices is provided in Table 3 and Annex Figure 4. Global maize prices (US yellow) increased by 38% between March 2007 and March 2008. However, the increase was a massive 172% in Dar es Salaam (Tanzania) and 45% in Kampala (Uganda) in the same period. The international price of rice increased by 98% and this was matched by a 99% increase in Nairobi (Kenya). In the first 3 months

of 2008, international prices of maize rose by about 15%. In the same period, the price increased by 19% in Kampala and by 8% in Nairobi. However, it declined by 20% in Kigali (Rwanda) and marginally (2%) in Dar es Salaam in the same period. Rice prices increased by 43% globally between January and March 2008 but rose by an even higher rate (58%) in Nairobi. Declines in rice prices were recorded in Kigali (1%) and Dar es Salaam (10%). Beef prices did not increase significantly between March 2007 and March 2008 but local prices jumped significantly in Kampala and Zambia. While domestic maize price trends have tracked international prices in the recent past, the relationships are inconsistent (Annex Figure 4). Another key observation is that domestic prices are much higher than international prices suggesting the existence of protectionist domestic policies.

**Table 3: Changes in local and international prices (%)**

Commodity	Market	Price (US\$) March 2007	Price (US\$) March 2008	Price (US\$) Jan 2008	% change (March 2007–March 2008)	% change (Jan– March 2008)
Maize	US Yellow	168.2	232.67	203.2	38.3	14.5
	Nairobi Kenya	187	240	222	28.3	8.1
	Kigali Rwanda	239	267	335	11.7	-20.3
	Dar es Salaam Tanzania	120	327	335	172.5	-2.4
	Kampala Uganda	140	203	171	45.0	18.7
Rice	Thai A1	263.3	521.5	364.5	98.1	43.1
	Kigali Rwanda	759	901	912	18.7	-1.2
	Dar es Salaam Tanzania	545	666	743	22.2	-10.4
	Kampala Uganda	668	824	677	23.4	21.7
	Nairobi Kenya	474	943	597	99	58
Beef	Beef (Australian, cow beef, boneless)	2,612*	2,687**	2,687	2.87***	5.6
	Kampala Uganda	3,000	3,958.3	3,625	31.94	9.2
	Zambia	13,742	15,945	15,357	16	3.8

\* Jan 2007; \*\* Jan 2008; \*\*\* Annual change from January 2007 to January 2008.

Sources: FAO (2008b); RATIN (2008a); Central Statistical Office of Zambia (2008).

The results presented above suggest some degree of price transmission of global prices to domestic markets, but the extent of this transmission differs by country and commodity. Clearly, global price changes are not fully transmitted to domestic markets and there is evidence that in some cases, domestic markets in ESA countries are insulated from international markets. The pattern of price changes even in neighbouring countries suggests that other regional and domestic factors may be critical in determining the extent to which domestic markets are integrated to global and regional markets. For example, the degree of price transmission may depend on whether a country's main staple is traded on non-traded; whether a country is landlocked or not; and whether a country is a net importer or net exporter of food. Other factors include conflict or post-conflict, neighbourhood effects, level of infrastructure development, and domestic policies among others. It was not possible to analyse all of these factors because of lack of data. However, two factors that were considered for analysis are tradeability of a country's main staple and

landlockedness. The results on these two factors are conclusive on tradeable and non-tradeable commodities and mixed on whether a country is landlocked (Table 4).

The severest food price inflation has been in landlocked Ethiopia. It exhibited the highest change in FPI between January 2005 and March 2008 and between March 2007 and March 2008. Next in severity is Kenya, which is not landlocked, whose FPI rose by 70% between January 2005 and March 2008 and by 20% in the period March 2007 to March 2008. The recent price surge in Kenya was associated with the post-election violence. Landlocked Uganda has experienced the least food price inflation in the last three years. Analysis based on price of the main staple in each of the countries shows that between March 2007 and March 2008 maize exhibited the largest increase in domestic prices. Non-traded bananas and teff which are staples in Uganda and Ethiopia respectively exhibit the least price increases between March 2007 and March 2008. Tanzania experienced an exceptionally high maize price change of 94% during this period. Clearly, price changes between March 2007 and March 2008 were highest for traded grains and lowest for non-traded food commodities.

**Table 4. Country level change in commodity prices**

Country	% change FPI Mar 2007 to Mar 2008	Staple food	% change in commodity price Mar 2007 to Mar 2008	Severity	Traded?	Landlocked?
Kenya	20.1	Maize	30.0	+++	Yes	No
Tanzania	11.2	Maize	93.7	++	Yes	No
Zambia	9.1	Maize	33.8	+	Yes	Yes
Rwanda	1.7	Beans	35.5	+	Yes	Yes
Uganda	8.6	Banana	6.7	+	No	Yes
Ethiopia	39.4	Teff	19.81	++++	No	Yes

Sources: Central Bank of Kenya (2007); Kenya National Bureau of Statistics (2008); Ministry of Agriculture of Kenya (2008); Tanzania National Bureau of Statistics (2008); Tanzania Chamber of Commerce, Industry & Agriculture (2008); Uganda Bureau of Statistics (2008a); Ethiopia Central Statistical Agency (2008a); EIAR (2008); Central Statistical Office of Zambia (2008); National Institute of Statistics of Rwanda and Ministry of Finance and Economic Planning (2008); Ministry of Agriculture and Animal Resources Rwanda (2008).

The above analysis points to the merits of a nuanced approach to the analysis of the global food price crisis to take account of not only regional and country specificities but also household differences. A number of examples highlight this need. Uganda's ability to be self-sufficient in basic food staples, most of which are non-tradeables, has been shown to cushion households against high food prices (see Box 1). Ethiopia has implemented domestic policies that have been shown to raise food prices even though the country's main staple is non-traded (see Box 2). Although the correlation coefficients in Table 1 show that prices of meat products are correlated with global prices for Rwanda, this may

reflect increasing demand fuelled by rising incomes in the country. Therefore, rising domestic demand may be fuelling high price growth rather than transmission of world prices to local markets. Similarly, milk supplies to Uganda's urban markets mainly come from relatively long distance areas such as western Uganda, and high fuel costs coupled with poor infrastructure may lead to a rise in transport costs reflected in retail prices.

**Box 1. Uganda household level analysis**

Ugandans should not see sustained, general significant food price increases in their country due to the isolation of the country from global markets and its ability to be self-sufficient in basic food staples. However, Uganda is a key staple exporter to the region such that the secondary effects of regional price increases on household food security and welfare in Uganda could be significant. Therefore, the country should adopt an alert wait-and-see stance in relation to rising food prices. However, measures should be implemented to enhance food access for the Ugandans in Karamoja and the internally displaced persons (IDPs) in northern Uganda.

Why the need to adopt an alert wait-and-see stance in relation to rising food prices? It seems as if most Ugandan households would be quite exposed to the potential adverse effects of rising food prices. Even if Uganda is self-sufficient in basic food staples, about 83% of all Ugandans are net buyers of all food and 63% are net buyers of staples only. More specifically, about 66% of all Ugandan households are significant net buyers who do not rely on their own production for most of their food consumption. Their food sales are 50% or less of their food purchases and 25% or more of the food they consume is provided by markets. Among rural households, the proportion of significant net buyers not relying on subsistence agriculture for food consumption is about 61%.

Further analysis reveals that bananas, roots and tubers are the primary sources of calories for Ugandan households, which tend to rely mainly on their own production for the provision of these food commodities. These staples are important substitutes to replace those such as beans whose prices rise significantly. Moreover, diet quality seems to improve with rising income in Uganda, although not strongly. Therefore, rising food prices that decrease the purchasing power of Ugandan households should only slightly worsen diet quality in the country.

Source: IFPRI Kampala (2008).

## **Box 2. Ethiopia: Causes of rising food prices**

Grain price variability stemming from rainfall variability has been the key feature of Ethiopian grain markets. However, in recent years, prices have been surging considerably even with good harvests caused by good weather in the country. The recent price increase in Ethiopian grain markets forced the government to intervene through two major measures, i.e. an export ban for major grains and subsidized sale of grains (wheat) to low-income urban households. The possible causes of the unusual price increases in spite of consecutive years of good harvest since 2004/05 include:

- Overall increase in grain demand not matched by an increase in supply; the demand increase is due to nominal income increase (rapid increase in government expenditures); credit access (commercial and microfinance); increase in the value of export receipts; cash and in-kind transfers from remittances and productive safety net programmes (PSNP); and population growth.
- Government policy of relying on domestic rather than international food aid.
- Reduced marketable supply from small-scale farmers due to increased retention on farm.
- Alleged collusion among a few big traders and unions (cooperatives).
- Rising marketing costs due to the introduction of value added tax (VAT) on food items and increasing fuel prices.

Source: Dorosh and Subran (2007).

## **4.2 Outlook for 2008/09**

### **4.2.1 Regional supply and demand update**

Grain production forecasts for Southern Africa remain favourable (except for Zimbabwe), despite late planting rains followed by floods and subsequent excessive dryness. Projected production for 2008/09 in South Africa is 11.5 million tonnes (over 30% increase over 2007/08). Malawi will have higher than average production of 3 million tonnes. Mozambique may face a contraction in production due to above normal rainfall and cyclone-related flooding; Madagascar will face a limited impact from Cyclone Ivan since the government has initiated a free seed distribution programme to encourage re-planting.

East Africa's crop outlook for 2008 is affected by both conflict and weather conditions. Population displacements in Kenya and higher input costs have negatively affected planting. Production is estimated at 2.16 million tonnes which is a 22% decrease over 2007/08 production. Cereal prospects in Ethiopia are highly uncertain due to delayed rains. Similarly, grain production in Tanzania is estimated to be slightly lower than 2007 levels due to poor rains. A favourable harvest is expected in Uganda.

Kenya's demand for imports is expected to increase in the second half of the year. This is due to an expected drop in production arising from a combination of disruption of production by the post-election crisis early in the year and poor rainfall during the long rains in March and April. Uganda, Rwanda, Burundi and Democratic Republic of Congo (DRC) are increasingly consuming more maize due to changes in eating habits and this

will increase the demand for maize in these countries in 2008. Zimbabwe could require over 500,000 tonnes or more given that Malawi suspended delivery of 100,000 tonnes of maize to the country recently. Ethiopia is already facing a serious shortfall arising from poor harvests and may require food imports.

The regional supply outlook suggests poor production prospects in 2008/09 in most countries in the ESA region. With the exception of South Africa, where a substantial exportable surplus may be realized, most of the other countries will have to rely on world markets to meet demand. Although forecasts by FAO show that world output of coarse grains will increase in 2008 the high world prices for grain, coupled with high transportation costs imply prospects for high food import bills for these countries.

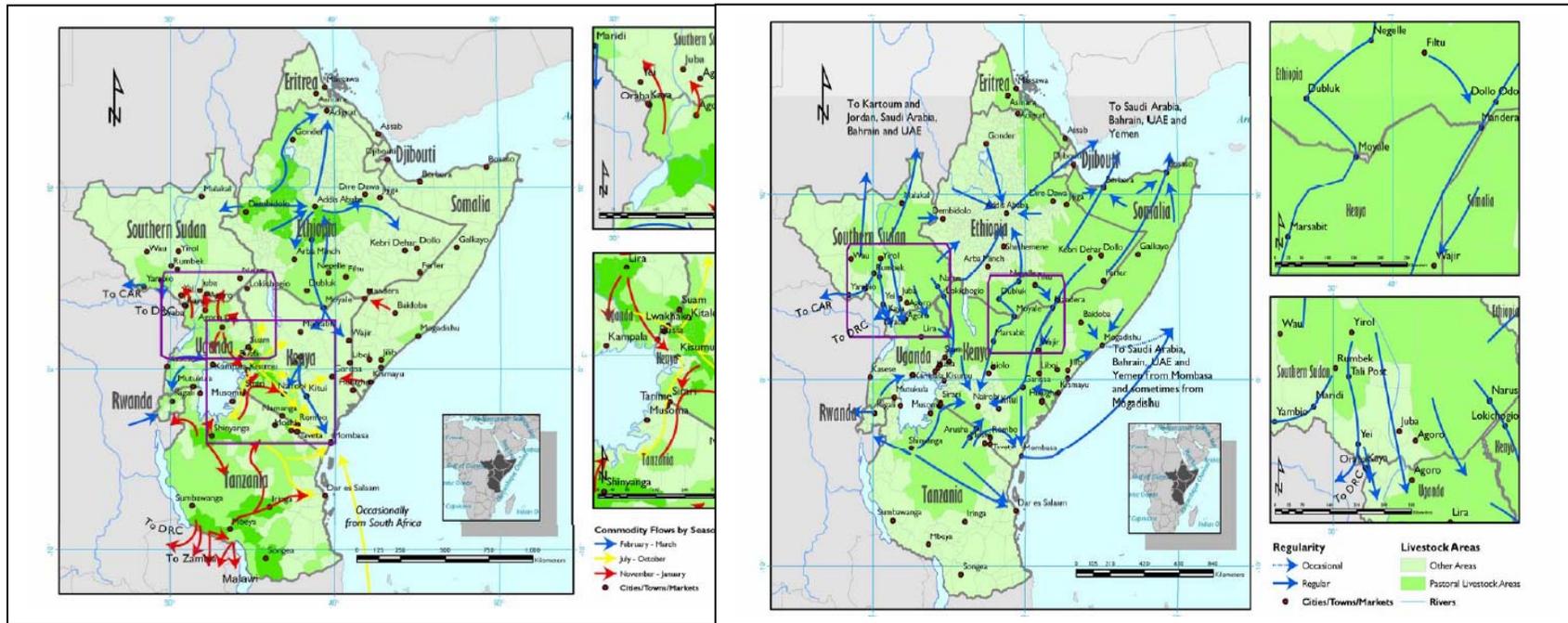
#### 4.2.2 Commodities trade flow

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 ESA is informal and food commodities move from surplus to deficit areas at different times of the year (Figure 3). Kenya's maize exports to Tanzania are expected to end by June when Tanzania starts to harvest. Tanzania is expected to export maize, rice and beans into Kenya and Malawi starting mid-June. Since this may not be adequate, Kenya is already eyeing South Africa for maize imports as harvesting starts in June for August deliveries. Rwanda is expected to continue to import maize from Uganda at an average of 5,000 tonnes per month. Uganda maize and bean exports to Kenya will start after the harvest in June. As already mentioned, Malawi has suspended a contract to supply maize to Zimbabwe indefinitely.

Clear trade flows from surplus to deficit areas are an important buffer for localized price surges and should be facilitated rather than impeded. Policies to improve the efficiency of the informal trade would contribute significantly to food security in the region. Policies such as export tax or export ban only dampen incentives to producers and fuel speculation in the market.

### Maize

### Livestock



Source: FEWS NET, 2007

Figure 3. Production spots and market flows in the Greater Horn of Africa (GHA).

### **4.3 Regional trade potential**

These results point to the importance of domestic and regional markets in discussions regarding food prices and food security in ESA. Domestic food prices are to a large extent determined by local and regional demand and supply conditions. In recognition of this fact, COMESA countries committed themselves to moving away from a national to a regional approach to dealing with regional food security at a meeting held in Nairobi in October 2004 (Nairobi Declaration of The Second Meeting of Ministers of Agriculture, 2004).

Using the example of maize, a key and strategic food crop in ESA, the potential for regional trade in food can be illustrated. Total trade in maize in COMESA was worth US\$ 1.35 billion in 2002 and US\$ 0.8 billion in 2003. However, less than 10% of this trade has been intra-regional (Nyoro et al., 2007). Most trade in maize is with countries outside COMESA. The increase in global prices implies that domestic production can become more competitive than before and this presents a number of ESA countries with an opportunity to expand domestic production and supply regional markets. However, the question is what needs to be done for this to be achieved?

## **5. What are the key drivers of the food situation in ESA?**

The conflicting pattern of price changes in different countries points to the need to explore further the regional dimensions of the food security situation in the ESA. A nuanced approach that takes into account both the regional and the national contexts offers better prospects for understanding the food situation in ESA and identifying potential solutions to the food crisis. The question that begs answers is whether there is scope for a regional approach to addressing the food price problem and the wider food security issue the high and volatile prices engender. The results show that countries are affected differently by the price surges, i.e. the severity of the problem is different in different countries; price surges occur at different times of the year even for the same commodity and commodities do not hold equal importance in contributing to food price inflation in ESA countries. All these considerations suggest that there might be considerable scope for addressing the high food price problem by exploiting the implied national and regional synergies.

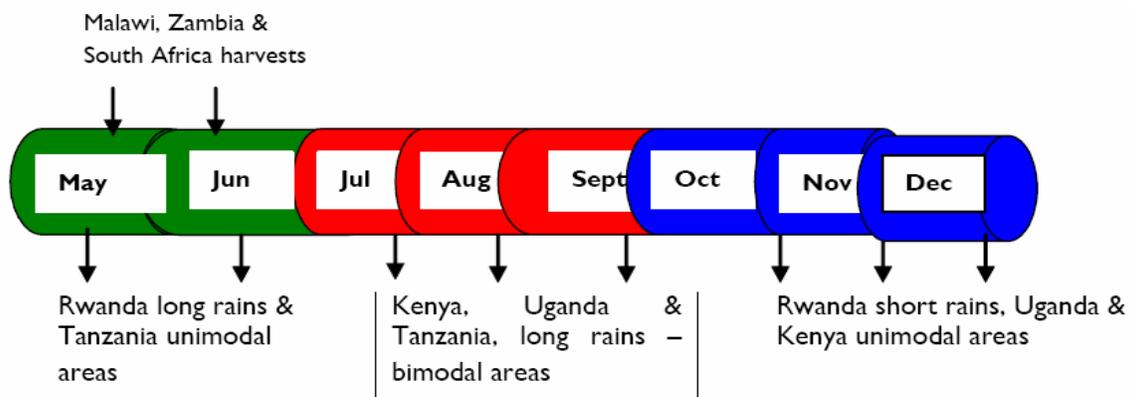
Plausible underlying causes of the price surges in ESA countries include global, regional and national factors. As discussed earlier, global factors include rising fossil fuel prices, dwindling supplies of grains (due to their conversion to fuel) and climate effects. Regional factors would be rising incomes (from sustained economic growth in most countries), urbanization and attendant changes in consumer preferences, disruption of supply in countries in conflict (DRC, Sudan and Uganda) or emerging from conflicts (Kenya) and prevalence of small and fragmented markets that are poorly connected. At the national level, many of the above factors apply in addition to stagnant or declining productivity and poor market organization of key staple foods.

The factors affecting demand for food in ESA are similar to the global factors discussed earlier. They include rising population and incomes (from sustained economic growth in most countries), and urbanization with the attendant changes in consumer preferences. In the ESA region there are internal disparities related to distribution of incomes which make certain population categories more vulnerable to price changes. However, the effects of these demand side factors may not have been as rapid as to be responsible for the sudden price surges and volatility. Conversely, a closer scrutiny of the supply side may offer better prospects for unearthing the factors responsible for the volatile and rising food prices in ESA countries.

A key factor is spatial climatic variability which assumes even greater importance when it is considered that agriculture in the region is mainly rainfed. Only 12.6 million hectares representing about 2% of the potential irrigable land area of 596.7 million hectares is currently under irrigation in COMESA countries. The length of the growing period is highly variable, ranging from only a few days in the Sahara to a whole year in the DRC (Annex Figure 5). It is predicted that with climate change, this scenario will change as will the frequency and variability of droughts and flash floods. As other parts of sub-Saharan Africa, ESA soils are highly variable, degraded, eroded and deficient in key nutrients.

Diverse soil and climatic factors give rise to a range of agro-ecological zones with differing agricultural potential. However, the diversity in agro-ecological zones implies the possibility of a much diversified agricultural production, from drought resistant crops and livestock to intensified crop and livestock production. Even where countries produce similar agricultural products, spatial climatic variability implies that supplies are available at different times in a year due to staggered harvesting in the region (Figure 4).

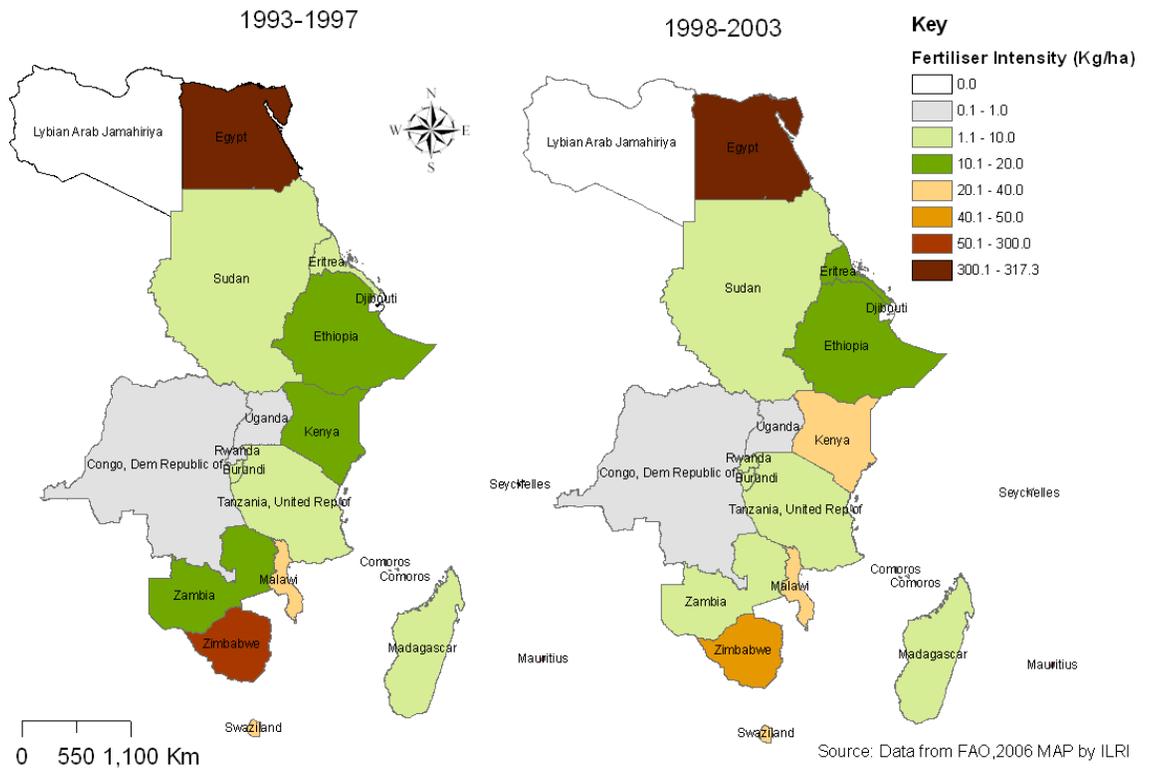
Domestic markets are small and fragmented with individual farmers selling small quantities of the same product. There are considerable trade potentials associated with small markets and the phenomenon of staggered harvesting since surplus areas can supply food to deficit areas within and between countries.



Source: RATIN (2008b).

**Figure 4: ESA harvesting timeline**

As in the global scene, increasing prices of key inputs (fertilizer, fuel for transportation and feeds) are constraining supply response even as food prices increase in ESA (Annex Figure 6). The high fertilizer prices are likely to reduce an already very low intensity of fertilizer use even further (Figure 5).



Source: ILRI (2008a).

**Figure 5. Fertilizer use intensity in COMESA countries.**

High oil prices are driving up the costs of transportation, freight and processing of agricultural products. High transport costs are already making international markets less attractive for high bulk low volume commodities such as staple grains compared to regional and local destinations.

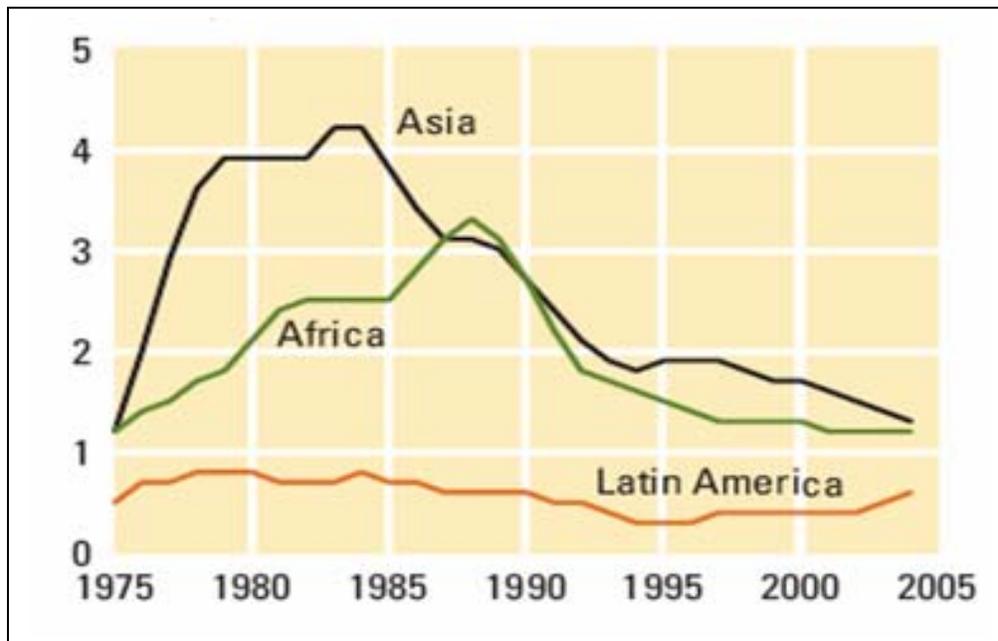
In many ESA countries, sub-regional and regional markets are poorly integrated due to infrastructure limitations and tariff and non-tariff barriers to trade. Trade barriers include restriction of movement of staple foods coming from neighbouring countries, export bans and cumbersome customs procedures. These barriers are unpredictable and make it risky for trading firms to invest in developing durable marketing networks across ESA. 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, Tanzania and Ethiopia imposed export restrictions in an attempt to shore up their own domestic supplies.

Other factors affecting the food situation are disruption of supply in countries in conflicts (e.g., DRC, Sudan and Uganda) or emerging from conflicts (Kenya). 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 or because they contain protected tropical forests. Besides providing facilities for human habitation, areas emerging from conflict will require basic infrastructure to support agricultural production. Tropical forests need to be protected since their exploitation carries significant environmental costs in terms of loss in biodiversity and ground cover.

A key factor responsible for low supply of food in ESA has been the low level of public sector investment in agriculture. Spending on agriculture relative to agricultural GDP is low. In 2005 only Ethiopia and Malawi (and recently joined by Angola) spent 10% or more of their total expenditure in agriculture among the 19 COMESA countries. Many countries are unlikely to meet the Maputo Declaration to allocate 10% of government expenditure to agriculture by 2008. Official development assistance (ODA) to African agriculture has been on the decline for the last two or so decades (Figure 6). The under investment by governments and donors has translated to low investment in public agricultural research, rural infrastructure and rural development in general. Research intensities, i.e. agricultural research and development (R&D) spending as a percentage of agricultural GDP, show that countries in sub-Saharan Africa invested 0.72 of their agricultural GDP in agricultural R&D as compared to 2.36 for developed countries in 2000.

Low agro-potential, low use of inputs, lack of markets and low investments in agricultural and rural development, have led to agricultural productivity in sub-Saharan Africa being the lowest in the world. In ESA, yields of most crops are below African and global levels except for cassava, beans, coffee and tea (Omamo et al. 2006). For example, large declines in maize productivity in Eritrea and Swaziland have been recorded in the last decade. Tanzania and

Mauritius have shown good productivity gains. Most of the other countries recorded modest gains or losses in productivity (Table 5). Low agricultural productivity has meant that food supply which has been growing at a rate of 2.5% in COMESA has not kept pace with the population growth rate of 3%. Food deficits have become a common feature in many of the countries in the region.



Source: World Bank (2008).

Figure 6. ODA to agriculture by region, 2004 US dollars billions.

Table 5. Trends in maize productivity in COMESA and other regions (tonnes/ha), 1995–2006.

	1995-1997	1998-2000	2001-2003	2004-2006
Burundi	1.3	1.1	1.1	1.1
Comoros	2.4	2.2	2.3	2.3
Congo, DRC	0.8	0.8	0.8	0.8
Djibouti	1.7	1.7	1.7	1.6
Egypt	6.7	7.5	7.5	8.0
Eritrea	0.4	0.6	0.4	0.2
Ethiopia	1.6	1.7	1.7	2.0
Kenya	1.6	1.5	1.6	1.8
Libya	1.3	2.2	1.7	2.3
Madagascar	0.9	0.9	1.1	1.4
Malawi	1.3	1.6	1.1	1.1
Mauritius	4.6	6.3	7.2	7.3
Rwanda	1.1	0.8	0.8	0.8
Sudan	0.6	0.7	0.8	0.8
Swaziland	2.0	1.7	1.1	1.0
Tanzania	1.6	0.7	1.3	1.6
Uganda	1.4	1.7	1.8	1.5
Zambia	1.7	1.4	1.5	1.9
Zimbabwe	1.2	1.2	0.7	0.6
<b>COMESA &amp; EAC</b>	<b>1.8</b>	<b>1.9</b>	<b>1.9</b>	<b>2.0</b>
<b>Northern Africa</b>	<b>4.7</b>	<b>5.4</b>	<b>5.6</b>	<b>6.0</b>
<b>United States of America</b>	<b>7.7</b>	<b>8.5</b>	<b>8.6</b>	<b>9.6</b>
<b>Central Asia</b>	<b>2.7</b>	<b>3.5</b>	<b>4.6</b>	<b>5.5</b>
<b>Eastern Asia</b>	<b>4.8</b>	<b>4.9</b>	<b>4.8</b>	<b>5.2</b>
<b>Western Asia</b>	<b>3.4</b>	<b>3.5</b>	<b>3.6</b>	<b>4.5</b>

Source: Authors' calculations based on FAOSTAT dataset (the figures indicate three years average).

## 6. What is the impact of rising food prices?

### 6.1 Country Level

ESA countries have high heterogeneity in agro-ecological, geographic, climatic and socio-economic conditions between and within themselves. Some of these differences determine which staple foods are produced and whether households are net buyers or sellers of staple grains. Other differences arise from whether the country is landlocked, in conflict, has neighbours in conflict or has poor infrastructure. In the event of rising food prices, the most vulnerable countries are the net importers of food, especially when the staple is tradable (e.g. maize), with a high level of import dependence for inputs such as fuel and fertilizer. The impacts caused at the macro level are inflated food import bills, deficits in the current account of the balance of payments and fiscal sustainability of imports.

### 6.2 Household level

It is expected that households that are net sellers of food benefit from rising prices while net buyers of food lose because their food budgets rise. Rural households in ESA spend a higher proportion of their income (45–75%) on food compared with urban households (34–58%) higher in drought years and lower in good production years (Jayne et al. 2007) (Table 6). Poor households in urban and rural areas suffer more because they spend a large proportion of their income on food. Households that are buyers of staple grains are generally poorer and have smaller farm sizes and asset holdings than the median rural household. They are directly hurt by higher mean grain prices. Only about 5% to 15% of the rural population buys and sells the main staple commodity in the same year (Jayne et al. 2007). They comprise both relatively large farms that sell grain and buy back small quantities of processed meal, as well as relatively poor households that make distress sales of grain after harvest only to buy back larger quantities later in the season. However, this latter sub-group typically comprises less than 10% of the rural farm population.

**Table 6. Expenditure on food as percentage of total household expenditure**

Country	National	Rural	Urban
Burundi	74	75	48
Ethiopia	66	68	55
Kenya	51	62	40
Malawi	56	45	58
Madagascar	63	75	54
Tanzania	65	67	54
Rwanda	68	77	49
Uganda	45	50	34
Zambia	68	74	57

Source: Country welfare monitoring reports.

## **7. Responses to food price crisis**

### ***7.1 Regional and international response***

For some time now, there have been strong perceptions that global food prices have been on the increase. This perception seems to have intensified several fold since the beginning of 2008. The notion has been that this has been more so in the urban areas, where riots and protests have been reported in all corners of the globe. Key multilateral agencies, including the World Bank, the United Nations, the FAO, and the African Union - New Partnership for Africa's Development (AU-NEPAD) have for instance supported this claim and have announced needed actions to respond to the situation. On 13 February 2008, the FAO announced that 36 countries are in crisis as a result of higher food prices and will require external assistance, 21 of the countries being in Africa. In January, in Davos and in Addis Ababa in April, World Bank President Robert Zoellick called for action to tackle hunger and malnutrition in a world of rising food prices, noting that hunger and malnutrition is the forgotten Millennium Development Goal (Zoellick. 2008).

A series of meetings highlighted the need to invest in agriculture as a means to tackle the perceived food price crisis. In May 2008, AU-NEPAD organized a four-day workshop to build a coordinated African response to high food prices on the continent using the framework of the Comprehensive Africa Agriculture Development Programme (CAADP). Workshop participants highlighted that high food prices on the continent exposed the long-term under-investment in agriculture and called upon all stakeholders to devise and implement measures to improve food security in Africa (AU-NEPAD 2008). A high-level FAO conference on world food security and the challenges of climate change and bio-energy was held in early June 2008 and was attended by officials from 181 countries. The summit's final declaration adopted by acclamation reads: 'There is an urgent need to help developing countries and countries in transition expand agriculture and food production, and to increase investment in agriculture, agribusiness and rural development, from both public and private sources' (FAO 2008c). The FAO Regional Conference for Africa was held in the third week of June 2008 in Nairobi, with food security at the top of its agenda. The meeting highlighted that slow growth in agricultural production caused food insecurity. The Director General of FAO, Dr Jacques Diouf, explained that African agriculture still faces many constraints, including undercapitalization which makes it inefficient and uncompetitive (FAO 2008d; Opondo 2008).

There is growing consensus that the price surge is not a temporary hump but rather a structural change, a sustained move to a new and higher plateau for prices. Proposals coming out of the meetings and workshops on rising food prices will need to be augmented by a strong evidence-base of the food situation in the region so that options that are practical and can be implemented may be developed. For the ESA countries, regional collective action holds promise to individual country response so as to benefit from the heterogeneity in potential agricultural products and production horizon.

## **7.2 Country responses**

All countries in ESA have been affected at various levels by rising food prices and have responded in different ways to the situation. 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 the agricultural supply response. The responses observed in the ESA region were a combination of measures aimed at consumers, producers and trade. Measures implemented by COMESA member countries are shown in Tables 7 and 8.

Support to consumers is often the first course of action for most countries in an attempt to reduce the vulnerability of poor consumers in rural and urban areas to food price increases. The most popular support for consumers has been reduction of taxes on food and seven COMESA countries were already implementing this policy by June 2008. This was followed by price controls and/or subsidies which were implemented by four countries; one country was giving fuel subsidies. The other policy action is to boost domestic supply by using reserves and this is being implemented by five countries.

Supply side measures are aimed at inducing rapid supply response to restore a better balance between food supply and demand. They include price controls and subsidies on key inputs through the distribution of seeds and fertilizers, directly or through a system of vouchers and subsidies and guaranteed minimum prices (often high) for outputs. Trade measures aimed at ensuring domestic food security are designed to increase imports or restrict exports. Measures designed to increase imports have been implemented by two countries and those to restrict exports by four countries.

Social measures to protect food consumption of the most vulnerable populations (e.g. the extremely poor and children) have also been implemented. Those most vulnerable to food price shocks need to be protected from nutritional deprivation, making distress sales of their assets and reductions in their real purchasing power. Measures that have been used include school feeding programmes in five COMESA countries, cash transfers, food-for-work and food ration schemes which have been implemented by four COMESA countries.

If these immediate measures are to have a sustained impact, they should be followed up by actions in the medium term that will result in an accelerated and significant reduction in the number of people at risk of hunger and malnutrition. The focus for the longer term should be on generating and enabling farmers to apply sustainable technologies that enhance capacity to meet food needs in the medium and long term. The course of action taken by a country thus depends to a large degree on whether they are net importers in which case they resort to building of stocks, e.g. maize in Kenya. If they are net exporters, they use protectionist policies, e.g. banning exports as was done for maize in Tanzania.

**Table 7. Policies currently implemented to respond to rising food prices in ESA region: Domestic policies aimed at consumers and producers**

Country	Consumers						Domestic supply			
	Reduce taxes on food grains	Price controls/ consumer subsidies	Cash transfer	Food for work	Food ration/stamp; vouchers	School feeding	Increase supply using food grain stocks	Agricultural input subsidies	Increase administered prices for producers	Incentives for expanding production (credit)
Burundi	√		√	√	√	√				
Comoros Islands										
Congo Rep.		√								
Djibouti	√									
Egypt				√		√				
Eritrea		√	√	√						
Ethiopia	√						√			
Kenya	√		√	√	√	√	√	√	√	√
Libya				√	√	√				
Madagascar	√									
Malawi			√					√		
Mauritius		√								
Rwanda		√								
Seychelles										
Sudan	√						√			
Swaziland										
Tanzania	√				√		√			
Uganda										
Zambia	√						√			
Zimbabwe		√	√			√				

**Table 8. Policies currently implemented to respond to rising food prices in ESA region: Trade policies for responding to rising food prices**

Country	Trade Measures - food commodities						Trade measures - agricultural inputs		
	Increase supply via imports	Lower import tariffs	Increase import quota	Export restrictions	Increase export taxes	Reduce export quotas	Compensatory financing	Lower import tariff for fertilizer	Lower import tariff for seed
Burundi									
Comoros Islands									
Congo Rep.									
Djibouti									
Egypt				√					
Eritrea									
Ethiopia	√			√					
Kenya	√	√		√				√	
Libya									
Madagascar									
Malawi									
Mauritius									
Rwanda	√								
Seychelles									
Sudan									
Swaziland									
Tanzania				√					
Uganda									
Zambia									
Zimbabwe									

- Consistent with long-term policies to improve food security
- Some concerns for long-term food security
- Likely to hinder long-run food security depending on duration and targeting
- Highly likely to hinder long-run food security and/or create serious problems in neighbouring countries

Source: Adapted from World Bank (2008b), updated using country sources.

### **7.3 Short-term impacts of current policies and their implications**

Best bet policy options should increase household purchasing power, have no negative impact on food supply response and should not reduce incomes of poor food sellers. Actions to free import restrictions and release food grain stocks into the market often have immediate and favourable effects on consumers and on economic efficiency in general (Table 9). However, they provide only one-time relief and once the tariff or tax has been reduced to zero, no further reductions in price can take place through this measure. Furthermore, they entail revenue losses for the government which, in some countries, could be substantial.

While trade restrictions may help to contain pressures on domestic prices, they may signal problems and lead to panic buying in domestic markets. In extreme cases where the restrictions are implemented effectively, farmers can reduce planting of cereals in the face of low domestic prices for their products coupled with high prices for inputs. Export restrictions may also exacerbate price instability in regional markets, especially when they are implemented in an *ad hoc* and uncoordinated manner by different countries. Increased volatility may in turn worsen food security in neighbouring countries.

Safety net programmes must be carefully designed since they may place large demands on institutional capacity, which may often be lacking or can become overstretched. Major challenges include leakage of benefits to non-target groups, resale of vouchers by the target group and rent seeking by officials implementing the programmes. Care is needed to ensure that safety net programmes do not impede the formation of a private marketing sector by driving out nascent, indigenous, private sector input suppliers which may jeopardize medium- and long-term food security.

For rural households, an integrated approach to social protection should be taken that combines traditional transfers (social safety nets) and policies that enable smallholders to respond quickly to the market opportunities created by higher prices.

In the medium and long term, renewed attention to the agricultural sector will be essential (Table 9). High food prices constitute an important opportunity to boost agriculture since they provide incentives to the private sector to invest and produce. Moreover, there is ample scope for substantial increases in agricultural production and productivity. Productivity increases will require significant and sustained investments in public goods such as agricultural research, extension, agricultural and general infrastructure along with credit and risk management instruments, all of which will complement increased price incentives.

**Table 9. Implications of current short-term policies to respond to rising food prices**

	<b>Policy action</b>	<b>Number of countries implementing*</b>	<b>Probable consequences</b>
<b>Short-term policies</b>	Conditional cash transfers, e.g. cash-for-work, food-for-work programmes	5	Not feasible for low income countries, require high administrative capacities
	Self targeted food -or work-programmes	5	Less costly than administrative targeting, physical food transfer may lead to significant leakages
	Emergency food aid distribution	4	Physical food transfer may lead to significant leakages, disincentive to producer supply response
	School feeding programmes	5	Do not address malnutrition at infancy
<b>Medium term</b>	Reduction in tariffs and other taxes (VAT) on key staples	8	Reduction in fiscal revenues
	Food consumption subsidies for the poor, e.g. price subsidies, ration card systems, etc.	4	Create disincentives for domestic food producers if entrenched, require high fiscal costs
	Bans or taxes on grain exports	5	Limited impact on domestic prices, negative earnings for producers and exporters, sharp price fluctuations for net importing countries
	Grain buffer stock policies	5	High fiscal costs—management and governance, price effects not clear
	Market based risk management tools, market information systems	1	Private sector involvement, improved market efficiency
<b>Long term</b>	Increased investment in agricultural sector R&D		
	Investments in infrastructure—inland transport links between surplus and deficit areas		
	Support to an equitable international trading system		

\* For the names of countries implementing the policies refer to Tables 7 & 8.

## **8. Key messages and priority policy actions**

Addressing the harmful effects of the food price surge and volatility requires actions by stakeholders along the food chain. The consumption and welfare of the vulnerable sections of the populations must be protected by ensuring access to affordable food supplies. However, high food prices provide positive incentives for farmers to increase domestic production and/or regional trade. Favourable commodity prices also foster innovation that enhances competitiveness along food value chains.

### ***8.1 Policy options for responding to the food price crisis: Protect the vulnerable***

Rising food prices negatively affect most households in ESA because food accounts for 40–70% of household expenditures in the region. Households are affected differently; the poor are hit hardest and the poor in urban areas more so than those in rural areas. The urban poor who depend mostly on markets for their food supplies are hit hardest because food prices tend to rise faster than their incomes. In the rural areas net buyers of food have to cope with higher food budgets while net food sellers may gain through increased agricultural incomes. The rural landless are particularly vulnerable.

Recommended policy options for protecting the vulnerable populations from surging and volatile food prices in the region are provided in Table 10. Key short-term measures include targeted food subsidies, cash transfers where markets work and tax reduction on food grains. In areas where food is not available in markets, targeted food aid offers the best option for protecting the consumption of the vulnerable. For poor rural food producers, supporting their agricultural production activities should be combined with social protection measures. In the medium term, testing and piloting innovative risk management programmes such as weather-indexed crop and livestock insurance schemes hold promise.

In the long term, countries in ESA should invest in building and strengthening social safety nets. Such safety nets help create individual, household and community assets. Social safety nets can help create human assets like good nutrition and education as well as physical assets like roads and irrigation facilities (Table 10). They help households protect their assets when shocks occur. Shocks like floods, droughts and civil strife are quite common in ESA and can lead poor people to deplete their savings and reduce their consumption, with far-reaching effects for entire communities. Social protection policies can mitigate the devastating economic effects of these shocks. By helping households cope with risk, they permit households to use their existing resources more effectively. Since the threat of shocks keeps poor households from making investments that could offer high returns, social safety nets act as a form of insurance that gives them the freedom to innovate in ways that could be economically productive. They facilitate structural reforms to the economy.

Policy changes designed to facilitate long-term economic growth could impose short-term costs on some segments of the population. Safety nets can compensate households for the costs of such policy shifts and thereby directly raise growth rates and make them politically feasible. Recent evidence suggests that high levels of inequality impede economic growth

(World Bank 2005). By reducing inequality, social protection policies can create the conditions for growth to occur. India and China have set successful examples of public works programmes based on income-generating activities. The programmes provide employment, absorb unskilled labour and provide services to the community. Conditional cash transfers are becoming increasingly popular and are linked to the development of human capital. Mexico's Oportunidades (formerly known as PROGRESA—Programa de Educación, Salud, y Alimentación) has provided cash transfers to mothers among extremely poor populations in rural Mexico since 1990. Because the transfers are conditional on children's school attendance and visits to health centres, they have simultaneously improved the nutrition, health and education of poor households. Ethiopia has also set up a productive safety net programme (Box 3).

**Box 3. The Productive Safety Net Program (PSNP) in Ethiopia**

There has been increasing concern in Ethiopia that national policy makers and the international community have adopted a 'crisis management' strategy that has resulted in dependence on food aid, rather than addressing the underlying problems of poverty and livelihood insecurity. Therefore, a major change in the government's approach to safety nets was introduced in 2005. The new Productive Safety Net Program (PSNP) involves greater use of cash transfers and a longer-term focus. The programme is designed to enhance longer-term food security for 5 million chronically food-insecure people through cash and food transfers. Emergency food assistance programmes will also continue, but at a lower level—only 2.2 million people in 2005 (compared with 6 to 7 million people in previous years). Currently, an International Food Policy Research Institute (IFPRI) study to evaluate the PSNP is underway. However, the targeting of the PSNP after a year and half of implementation was evaluated by Sharp et al. (2006) and they concluded that the programme is reaching the poor through a combined administrative and community targeting approach, with some shortcomings.

Source: Gabre-Madhin et al. (2007).

**Table 10. Options for social protection**

	Measure	Who leads implementation	How they are implemented
1	Food vouchers (subsidy), food coupons, food stamps (where food markets work)	Governments, non-governmental organizations (NGOs), WFP, development partners	To be cashed at food stockists (opportunity for public-private partnerships)
2	Food aid where markets do not work when in crisis	Governments, NGOs, WFP	Targeted to reduce leakage (public-private partnerships)
3	Food-for-work and public works for wages	Governments, NGOs, private sector	Self-targeting
4	Strategic grain reserves	Governments, private sector, regional bodies under EAC or COMESA	Public-private partnerships, e.g. through warehouse receipt system
5	Cash transfer (where markets work)	Governments, NGOs, development partners	Public-private partnerships Need for nutrition education Measures to minimize leakages
6	Pre-school and school feeding programmes; probably post- and ante-natal feeding as well	Governments, NGOs	Target under five year olds (post-natal clinics), target pregnant women (pre-natal clinics). Future plans should involve the private sector. Use existing health systems
7	Reduce taxes on food grains	Governments,	Identify a threshold where tax reduction might be required
8	Enhance early warning systems, e.g. the Famine Early Warning Systems Network (FEWSNET)	Government, donors	
9	Set up contingency funds as safety nets for use during crisis because it is difficult to mobilize resources when most needed	Government, development partners	<ul style="list-style-type: none"> <li>• To be used in case of emergency (example the Ministry for Special Programmes in Kenya) using country's own resources, although donors may help</li> <li>• Might require regional collaboration in the case of transboundary problems, e.g. cross-border diseases</li> </ul>
10	Price stabilization mechanisms, e.g. warehouse receipt system	Governments, NGOs, development partners	Need working markets and infrastructure to facilitate this (legal systems for contract and enforcement, marketing information systems)
11	Weather indexed insurance: Offers opportunity for multi-level reinsurance given the staggered harvesting in the region	Government, development partners, private sector (e.g. banks and insurance companies)	Public-private partnerships Need for nutrition education Measures to minimize leakages
12	Subsidy for inputs, e.g. seeds and fertilizers	Government, development partners, private sector	Public-private partnerships Measures to minimize leakages

## **8.2 Policy options for responding to the food price crisis: Exploit regional diversity**

ESA countries exhibit variability in climatic conditions across and within themselves. The temporal distribution of production and staggered harvesting even of the same agricultural commodity offers large opportunities for trade. It is in the interest of ESA countries to utilize the opportunities embedded in their diversity in production to expand regional trade to address the food security problem facing them. Short-term measures to exploit this regional diversity and facilitate regional trade include lifting food export bans; reduction of import tariffs on food products; and trade policy harmonization to remove non-tariff barriers to trade and simplify trade procedures. In the medium to long term, the region could build a regional food reserve using, for example, a warehouse receipt system; exploit economies of scale in procurement and promoting distribution of agricultural inputs regionally; and upgrading and maintaining infrastructure and facilities along the main trade corridors in the region to facilitate movement of food from surplus to deficit areas.

### **1. Promote regional trade**

ESA countries have been pursuing regional and sub-regional agreements encompassing trade, political and economic cooperation through RECs, namely the EAC, COMESA and SADC. The RECs aim to reduce intra-regional trade barriers via the formation of regional free trade areas to eliminate tariffs, quotas and preferences on most goods traded among them. However, with the gradual removal of tariffs, non-tariff barriers are on the increase and these should be eliminated. Through the RECs, trade policy harmonization can be facilitated to simplify trade through removal of non-tariff barriers. Removal of export bans and having predictable restrictions using, for example, trigger stocks, reducing/removing tariff on food imports, harmonizing product standards and customs requirements across countries will increase intra-regional trade and stabilize food prices.

Trading costs can be minimized by identifying and upgrading facilities (railways, roads and inland harbours) in the main trade corridors and improving/rehabilitating them or building new ones where none exist, e.g. to Southern Sudan using tolls for road maintenance costs. The northern corridor portions of the Trans Africa highway linking Dakar in West Africa and the port of Mombasa is one example. Maintenance of such corridors has been hampered by lack of coordination between countries which bear the burden of maintaining sections within their own boundaries. This has partly resulted from lack of multi-country funding mechanisms since development partners prefer bilateral funding arrangements. There have been welcome developments in this regard with, for example, the AfDB proposal to support development of a road network to connect all sub-Saharan capitals and other cities with populations over 500,000 (Figure 7). The proposed network is estimated to result in an expansion of overland trade by about US\$ 250 billion over 15 years, with both direct and indirect benefits for Africa's rural poor (Africa Progress Panel, 2008).



● Capitals and Cities with a population above 500,000

— Trans-African Road Network  
 — AfDB proposed corridors

Source: Africa Congress Panel (2008).

**Figure 7. Proposed AfDB corridors and the trans-African road network**

Some policies such as the one that prevents trucks licensed to carry one type of product from carrying another product type adds to the transport costs in the region and impedes regional trade. For example, the Kenya Transport Association has been faulting the new East Africa Customs regulations terming them as uneconomical and irrational because they bar trucks licensed to carry transit traffic from carrying any local goods—even if the truck is empty on its way back—while those licensed to carry local goods are not allowed to carry transit ones. The association has been urging the Kenya Revenue Authority to license its members as interstate carriers thus enabling them to transport both types of cargo. They argue that this would be in line with COMESA Carrier License Regulations (Sanga 2008). For some areas, improvements in security could significantly reduce transactions costs. For example, traders require security escort to transport goods between Ethiopia and Kenya.

## **2. Exploit economies of scale in procurement of agricultural inputs and facilitate trade in inputs**

Trade liberalization of input markets is also very important in the longer term. An increase in the use of fertilizer is necessary to raise yields. The Abuja Declaration on fertilizer in 2006 declares fertilizer, from both inorganic and organic sources, a strategic commodity without borders. Governments can take appropriate measures to reduce the cost of fertilizer procurement at national and regional levels. Joint regional procurement of inputs, especially fertilizer, would allow for exploitation of economies of scale in bulk purchases. This may be fertile ground for the private sector, but would require endorsement and support by individual governments. COMESA should enhance its fast tracking efforts on this initiative. Trade in inputs will also be enhanced if countries harmonize their policies and regulations to ensure duty and tax free movement across regions, and the development of capacity for quality control.

Harmonization of seed policies would promote the use of improved seed across the region. The Eastern and Central African Programme for Agricultural Policy Analysis (ECAPAPA) (precursor to the Policy Analysis and Advocacy Programme) of the Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) spearheaded efforts to rationalize and harmonize policies, laws and regulations in the seed sector. The aim has been to enhance use within and between countries and hence promote productivity and marketing through access to wider markets (Box 4). These efforts need to be scaled out and implemented in the ESA countries through the support of the RECs.

#### **Box 4. Examples of ECAPAPA's achievements in rationalization and harmonization of seed policies, laws and regulations**

Facilitation of seed technical working groups, joint seed certification exercises and review of seed policies and regulations by ECAPAPA have resulted into the revision of certification procedures, harmonization of variety release and registration, and import/export procedures in Kenya, Rwanda, Tanzania and Uganda. The variety release procedure now takes one season down from three years. Seed Acts were revised and implemented in Rwanda in 2003 and in Tanzania in 2004 where Tanzania's plant variety protection (PVP) Act of 2003 was operationalized with the establishment of the Tanzanian Official Seed Certification Institute (TOSCI) to follow seed testing and quality control. In Burundi guidelines for implementation of the Seeds Act of 2003 and Plant Breeders Act of 2002 were reviewed. Sudan's Seed Act was revised in 2006, Uganda's Seed Act and PVP Bill received approval in early 2008 and efforts to collapse Kenya's Seed Acts from three to one are in progress.

In 2004 the Regional Seed Working Group was transformed into an expanded Eastern Africa Seed Committee (EASCOM) by bringing together public and private sector players to jointly address seed issues in the region. In 2006, EASCOM published national and regional variety lists and standards handbooks which are being considered by the ministries of agriculture in Kenya, Rwanda, Tanzania and Uganda. Draft quarantine pests lists and seed certification standards for Kenya, Rwanda, Tanzania and Uganda were produced. The number of quarantine pests has been reduced from 33 to 3.

National seed trade associations have been established in Ethiopia, Kenya, Madagascar, Rwanda, Tanzania and Uganda. They spearhead seed policy, legislation and regulatory reforms necessary for growth of the seed sector. Seed companies in Kenya grew from 17 in 1995 to 37 by 2007; from 13 in Tanzania in 2000 to 19 in 2007; and from 5 in Uganda by 2000 to 12 in 2006. Such growth breeds competition and augers well for broadening of national and regional markets.

Source: PAAP (2007).

### **3. Enhance market information and intelligence systems**

Improvements in market information and intelligence in the region would go a long way to enhance regional trade. Mechanisms for collating and sharing food balance sheets between different countries already exist in the region and need to be strengthened. Various initiatives such as RATIN, the Eastern Africa Grain Council (EAGC) and FEWSNET are already collecting and disseminating market data. The food balance sheets would have value added if they included forecasts over longer time horizons, e.g. six months, and options for remedial actions. Strengthening and using regional institutions for disaster preparedness and response by developing appropriate frameworks for preparedness, response and learning, is important. Research has an important role to play in providing the evidence base for such preparedness, response and learning.

### **4. Renewed advocacy efforts for a more equitable world trading system**

The current high prices 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. As it stands, a Doha deal relying heavily on elimination of agriculture export subsidies and deep reductions in domestic support would reduce poverty, but by a relatively small amount compared to the poverty-reduction potential of a more ambitious agreement that would rely on tariff cuts and greater market access. RECs 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 such as the US African Growth and Opportunity Act (AGOA), the EU's Everything But Arms, and the Economic Partnership Agreements (EPAs) with the EU.

## 5. Regional Food Stocks

Policies on grain storage and buffer stocks should also be reviewed to allow for building regional strategic reserves. Since most governments no longer have the facilities required to hold grain stocks, the private sector should be provided with incentives to enable them to play the complementary role as in the emerging warehouse receipt system (Box 5).

### Box 5. Warehouse receipt system

A warehouse receipt is a certified document reflecting a known quality and quantity of a product stored in a known certified warehouse for a given individual. The warehouse receipt system protects farmers against throw away sale prices for their commodities by providing them with safer storage for these commodities until market prices become attractive. When the commodities are stored, receipts reflecting commodity values at the time of storage are issued to commodity owners. Farmers use the receipts issued at the warehouses to get loans from commercial banks using their produce as security. This is money they can use to finance their growth needs and prepare for the next planting season before selling their previous harvests. Millers and other organizations including food aid agencies operating in the country can buy the warehouse receipts whose quality is guaranteed. Governments wishing to keep or hold stocks can purchase and carry warehouse receipts which guarantee quality and quantity of the stock in certified warehouses. Governments do not have to incur maintenance activities themselves for the stored commodities; this can be the work of the warehouse operators to ensure that quality products are available whenever needed.

Within EAC, countries with storage facilities can be very useful, since they can make these storage facilities available for individuals in other countries. If the government in Tanzania or Rwanda wishes to hold strategic stocks, they just need to buy warehouse receipts which guarantee quality and quantity of the stocks. The commodities could be in a warehouse either in Kenya or Uganda and whenever needed, transported to whatever location.

The warehouse receipt system is a very useful method for ESA governments to build food stocks so as to enhance food security across the entire region.

Kenya launched one in March 2008. Ethiopia and South Africa are other countries in Africa that have functional commodity exchanges, complete with warehouses. The Ethiopia Commodity Exchange (ECX) trades in six commodities: coffee, sesame, haricot beans, wheat and maize. ECX provides a marketplace where buyers and sellers can come together to trade and be assured of quality, delivery and payment. The exchange includes a trading floor in Addis Ababa, 6 warehouse delivery locations, and 20 electronic price tickers in major market towns.

Source: Eastern Africa Grain Council (2008); Gikunju (2008).

### **8.3 Policy options for responding to the food price crisis: Enhancing food supply response**

The dismal state of agriculture in many developing countries explains why they are unable to reap immediate benefits from higher prices and ensure their peoples' food security in a time of high prices. The World Development Report 2008 (World Bank 2007) shows the growing consensus that support for agriculture needs to be revived, after decades of damaging neglect. Governments and communities need to build the institutions and physical infrastructure they need for a productive agricultural sector that is ready for the challenges that lie ahead. ESA governments need to dedicate to agriculture a level of attention and funding that is commensurate with the importance of the sector for their development and food security in line with the Maputo declaration.

Lags are expected in the response in food supply to the current crisis in that it will take some time to produce results and these efforts must receive sustained levels of support. Increase in the supply of food will require the development and use of new crop technologies. This presents challenges since there is little unused high potential land for expansion and input prices such as those of fertilizer are increasing. Further investments are required to revamp institutions, e.g. research to generate technologies, and extension systems to advise farmers and those charged with availing inputs such as fertilizers, in order to boost the production of food.

#### **1. Remove price controls and export bans**

Commodity price controls and export bans may help to contain pressures on domestic prices, but they also serve as a disincentive to farmers. In response to low prices for their products and high input prices farmers reduce production. Export restrictions exacerbate the price spiral and instability in regional markets, especially when they are implemented in an *ad hoc* and uncoordinated manner by different countries. Increased volatility may in turn worsen food security in neighbouring countries.

#### **2. Make agricultural inputs affordable**

Provision of input subsidies has been criticized on the basis of arguments which include costs and sustainability, ineffective targeting resulting in elite capture, and market disruptions resulting into poor private input market development. They are criticized when they are seen to compete with other needy sectors such as infrastructure and market development. However, 'smart' subsidies, which make use of local delivery without undermining local private sector enterprise, are a very strategic investment for African governments to make. They are smart if they are targeted and time bound. Fertilizer/seed subsidies could be provided to poor and vulnerable households in the form of vouchers. If the vouchers are specified as redeemable from certified rural stockists, then such 'smart fertilizer/seed subsidies' could be used to further develop, rather than undermine, rural agricultural input markets that serve the poor. Input subsidies can also be provided as in-kind deliveries, cash payments, reduced market prices, reduced import costs, transport subsidies or credit guarantees to participating institutions.

Other options are to use cash transfers, but rather than cash, use voucher systems for fertilizer/seed such as those used in Kenya, Malawi and Ethiopia; and use in-kind input credit systems (pilots involving bank guarantees in Kenya, the millennium village project, Sasakawa Global 2000 models).

Cost considerations are critical and may provide evidence contrary to expectations. For example, subsidizing maize fertilizer in Kenya would seem preferable to importing maize for food consumption in 2008. Maize fertilizer prices have increased by more than 50% from their 2007 levels of Kenya shillings (KES) 33,000 ( US\$ 1 = KES 66) per tonne for planting fertilizer and KES 29,000 per tonne for topdressing fertilizer: the prices of planting and topdressing fertilizer currently stand at KES 80,000 and KES 50,000 per tonne respectively. Given that Kenya uses about 140,000 tonnes of planting fertilizer and 91,618 tonnes of topdressing fertilizer to produce maize, a subsidy provided to restore fertilizer prices to their 2007 levels would cost about KES 8.5 billion. The cost of this subsidy compares favourably with the cost (KES 12.228 billion) of importing 6 million bags of maize to replenish strategic reserves. The option also results in multiplier/spillover effects that the Malawi experience can attest to. Individual countries decide if they can finance the subsidies and/or seek bilateral and multilateral donor partnerships. The Malawi pilot fertilizer subsidy scheme was supported by the Department for International Development (DFID) and World Bank funding (Box 6).

**Box 6. Malawi: Successful fertilizer subsidy programme to enhance food security**

For the past two years, Malawi has registered bumper maize harvests not seen in the past 10 years: 2.7 million tonnes in 2006 and 3.4 million tonnes in 2007, well above the approximately 2 million tonnes needed to satisfy annual maize consumption in Malawi. Moreover, another bumper maize harvest of about 3.3 million tonnes is predicted for Malawi this year, in spite of the food crisis observed in other parts of the world (SOAS, MSU and ODI 2008). These record maize harvests are in part due to a fertilizer and seed subsidy programme implemented by the Government of Malawi and partially funded by the DFID of Britain (DFID, 2007). The programme provides poor smallholder farmers with coupons which they can redeem for subsidized prices on fertilizer and improved maize seeds. With the coupons, farmers pay only 30% of the input retail prices (Lepeska 2008).

The subsidy programme was first implemented in 2005 and targeted both maize and tobacco producers. The allocation of the coupons for maize fertilizer and improved maize seed varieties were proportional on maize acreage in Malawian districts. Similarly, the coupons for tobacco fertilizer were proportional to tobacco acreage in each Malawian district; the subsidy programme targeted fertilizer only for tobacco. Coupons were distributed by the Ministry of Agriculture of Malawi to district traditional authorities who then gave them to Village Development Committees. The committees would identify recipients and provide them with the coupons. Recipients had to be farmers who could not afford 1 or 2 bags of fertilizer at prevailing retail prices. Targeting of beneficiaries has been a problem since the programme began but has improved (SOAS, MSU and ODI 2008).

Both private and public retailers were involved in the fertilizer procurement and distribution for the 2006/07 season. Procurement contracts were awarded through a competitive process where potential suppliers provided tenders with the ones submitting the lowest bids winning the contracts. About 72% and 43% of the subsidized fertilizer and seed were procured and sold by parastatals; the balance was procured and sold by the private sector. The little involvement of the private sector in fertilizer procurement and distribution could have been due to the lack of attractive profits (SOAS, MSU and ODI 2008).

The Logistics Unit was responsible for managing the finances related to the programme; it would verify coupon authenticity and also pay input suppliers as required. Programme financial costs, reflecting fertilizer purchase and distribution costs net of sales, were about Malawi Kwachas (MK) 7.2 billion (US\$ 1 = MK 141.3) and 10.34 billion in the first and second year, respectively (SOAS, MSU and ODI 2008). In the absence of the programme, Malawi might have had to resort to food aid whose provision costs about 5 to 6 times more than the subsidy programme does.

Sources: DFID (2007); Lepeska (2008); SOAS, MSU and ODI (2008).

These subsidies will need criteria to define target groups composed of those who need them the most, for example by crop as in the case of Malawi, geographic area or wealth level (see Ethiopian example in Box 2: ). Governments should consider the transactional costs involved in targeting. From the Ethiopian example, three pilot options were discarded due to high administrative costs. In Malawi they have been successful in the last two seasons. In cases where the costs are too high, a blanket subsidy may be more feasible.

### **3. Reduce domestic taxes on fuel**

Transport costs are generally the largest single component of price differences between surplus and deficit areas. As transport costs decline, the size of the market expands for any particular farmer and demand becomes more elastic. While poor transport infrastructure connecting deficit and surplus areas is largely to blame for the high transportation costs, the costs can be lowered substantially by reducing tax on fuel. Although agricultural inputs in most countries are not subject to import duty, they attract high costs due to addition of VAT in transportation. For example, a 50% reduction in taxes, which have been estimated to constitute about 30% of fuel prices in Kenya, could dent transport costs significantly.

### **4. Build on best-bet technologies and pilot innovative risk management strategies**

Recent efforts to produce a list of most promising best bet technologies that could be used in response to the food crisis should be enhanced to test and upscale the technologies to boost crop yields in the region. To ensure sustained adoption of the new technologies it is imperative that the environment in which farmers operate is made less risky. Innovative risk management strategies such as the warehouse receipt system (Box 3) and weather-indexed insurance systems should be piloted to determine their suitability and efficacy.

### **5. Enhance input distribution systems**

Developing networks of rural stockists (agro-dealers) is critical for accelerating smallholders' access to quality agricultural inputs in ESA. Support through the Rockefeller Foundation to projects in Kenya, Malawi and Uganda provides examples of successes in this area. The projects are being implemented by the Agricultural Market Development Trust (AGMARK) for work in Kenya; Appropriate Technology (AT)-Uganda, for work in Uganda; and Citizens Network for Foreign Affairs/Rural Agriculture Input Supply Expansion (CNFA/RAISE) project in Malawi.

Stockists receive training to develop their technical, product and business management skills. On completion of the training, the stockists become 'certified agro-dealers' and are linked, using credit guarantees, to major agricultural input supply firms who offer them stocks for 30–60 days credit period. The credit guarantee covers 50% of the risk of default. The choice of agro-dealers, to whom credit guarantees are provided, is made independently by the companies based on their own selection criteria. Third, to improve affordability of inputs for farmers, the agro-dealers pack and sell seeds and fertilizers in small packages, ranging from 1 kg for seeds, to between 2 kg and 10 kg packs for fertilizers. Fourth, to help achieve economies of scale in sourcing and transporting inputs, the agro-dealers form purchasing

groups at the district levels with group members providing joint collateral to guarantee the supply of inputs from the supply firms. Furthermore, the agro-dealers are organized into national level agro-dealer associations which allow them to better negotiate for lower prices and better credit financing arrangements with the agricultural input supply companies, while it also helps them to influence government policies on imports, pricing, distribution and marketing of agricultural inputs. As the numbers of agro-dealers have expanded in each of these countries, the flow of farm inputs, particularly fertilizers and improved seeds, into rural areas have increased significantly (Rockefeller Foundation undated). This type of initiative could be up scaled throughout the region.

Public investment and support is needed to facilitate private sector participation in fertilizer supply. In Kenya, this policy approach to fertilizer promotion has resulted in impressive private sector response and an increase of 35% in fertilizer use per hectare cultivated over the past decade. This approach works best where there are no government fertilizer subsidy programmes in competition against private fertilizer companies (Crawford et al. 2006).

#### **6. Public investment in water management, e.g. irrigation**

The water challenge is huge with many rural populations living in areas characterized by frequent moisture stress that limits agricultural production and many countries are experiencing serious and worsening water scarcity (World Bank 2008). The IPCC predicts that by 2020, between 75 million and 250 million people in Africa will be exposed to increased water stress. Gross wastage in existing systems, inappropriate cultivation encouraged by poor water policy, conflicts between urban and rural users are contributing to rising water costs and lower productivity for agriculture. Given that most of ESA agriculture is rainfed and there are growing concerns of variable rainfall with climate change, investments in improved water use and management will be required. This calls for improved access to agricultural water by securing rights, storage and delivery infrastructure and increasing its productivity through integrated systems and high value production systems. Other options include upgrading of rainfed systems and reforms in water management policies and institutions (Box 7).

### **Box 7. Policy options for improving water management and use**

**Improve access to agricultural water and its use.** Target livelihood gains of smallholder farmers by securing water access through water rights and investments in water storage and delivery infrastructure where needed, improving value obtained by water use through pro-poor technologies, and investing in roads and markets. Multiple-use systems operated for domestic use, crop production, aquaculture, agroforestry and livestock can improve water productivity and reduce poverty.

**Increase the productivity of water.** Gaining more yield and value from less water can reduce future demand for water, limiting environmental degradation and easing competition for water. A 35% increase in water productivity could reduce additional crop water consumption from 80% to 20%. More food can be produced per unit of water in all types of farming systems, with livestock systems deserving attention. But this optimism should be met with caution because in areas of high productivity only small gains are possible. Larger potential exists in getting more value per unit of water, especially through integrated systems and higher value production systems and through reductions in social and environmental costs. With careful targeting, the poor can benefit from water productivity gains in crop, fishery, livestock and mixed systems.

**Upgrade rainfed systems.** Rainfed agriculture is upgraded by improving soil moisture conservation and, where feasible, providing supplemental irrigation. These techniques hold underexploited potential for quickly lifting the greatest number of people out of poverty and for increasing water productivity. Mixed crop and livestock systems hold good potential, with the increased demand for livestock products and the scope for improving the productivity of these systems.

**Reform the reform process targeting state institutions.** Following a realistic process to suit local needs, a major policy shift is required for water management investments important to irrigated and rainfed agriculture. A wider policy and investment arena needs to be opened by breaking down the divides between rainfed and irrigated agriculture and by better linking fishery and livestock practices to water management. Reform cannot follow a blueprint. It takes time. It is specific to the local institutional and political context. And it requires negotiation and coalition building. Civil society and the private sector are important actors. But the state is often the critical driver, though state water institutions are often the most in need of reform.

Source: Earthscan and IWMI (2007).

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## Annex 1. Abbreviations and acronyms

AfDB	African Development Bank
AGMARK	Agricultural Market Development Trust
AGOA	African Growth and Opportunity Act
ASARECA	Association for Strengthening Agricultural Research in Eastern and Central Africa
AGROBIO	Agro-biodiversity and Biotechnology Programme of ASARECA
AT-Uganda	Appropriate Technology-Uganda
AU-NEPAD	African Union-New Partnership for Africa's Development
CAADP	Comprehensive Africa Agriculture Development Programme
CGIAR	Consultative Group on International Agricultural Research
CIMMYT	International Maize and Wheat Improvement Centre
CNFA/RAISE	Citizens Network for Foreign Affairs/Rural Agriculture Input Supply Expansion
COMESA	Common Market for Eastern and Southern Africa
CPI	Consumer Proposed AfDB corridors and the trans-African road network price index
DFID	Department for International Development
DRC	Democratic Republic of Congo
EAC	East African Community
EAGC	Eastern Africa Grain Council
EASCOM	Eastern Africa Seed Committee
ECAPAPA	Eastern and Central African Programme for Agricultural Policy Analysis
ECX	Ethiopia Commodity Exchange
EDRI	Ethiopian Development Research Institute
EPA	Economic Partnership Agreement
ESA	East and Southern Africa
ESRF	Economic & Social Research Foundation
EU	European Union
FAO	Food and Agriculture Organization of the United Nations
FEWSNET	Famine Early Warning Systems Network
FPI	Food price index
GDP	Gross domestic product
GHA	Greater Horn of Africa
ICRISAT	International Crops Research Institute for the Semi-Arid Tropics
IDPs	Internally displaced persons
IFPRI	International Food Policy Research Institute
IITA-FOODNET	International Institute of Tropical Agriculture–Foodnet
ILRI	International Livestock Research Institute
IPCC	International Panel on Climate Change
KACE	Kenya Agricultural Commodity Exchange
KIPPRA	Kenya Institute for Public Policy Research and Analysis
NARO	National Agricultural Research Organization
NGOs	Non-governmental organizations

ODA	Official development assistance
PAAP	Policy Analysis and Advocacy Programme of ASARECA
PMA	Plan for Modernisation of Agriculture
PNSP	Productive Safety Net Program
PVP	Plant Variety Protection
RATIN	Regional Agricultural Trade Intelligence Network
REC	Regional economic community
ReSAKSS-ECA	Regional Strategic Analysis and Knowledge Support System–East and Central Africa
R&D	Research and development
SADC	Southern Africa Development Community
TOSCI	Tanzanian Official Seed Certification Institute
TUUSI	Technology Uptake and Up-scaling Support Initiative
US	United States of America
USAID/EA/REGI	United States Agency for International Development/East Africa/Regional Growth and Integration
VAM-M&E	Vulnerability and Analysis Mapping-Monitoring and Evaluation Unit
VAT	Value added tax
WFP	World Food Programme