

# Managing Food Security Implications of Food Price Shocks in Africa

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## Abstract

*Until the food price alarm went off, discussions on how to reduce hunger and malnutrition in Africa took place in an environment of declining food prices with estimates indicating that real food prices declined by about 75% between 1974 and 2005. However, since 2006, real food prices have been on the rise and although prices started to decline after mid-2008, they largely remained above their long-term trends. This paper provides a contextual overview of how African countries responded to the economic and welfare impacts of the food price crisis of 2006–08. The responses to the food crisis have been as varied as the African economies are diverse. In the short and medium terms, the policy options preferred by both governments and their development partners focused predominantly on social safety nets aimed at cushioning vulnerable communities and urban consumers from food inflation. The paper provides a critique of these responses and lays out broad outlines for what must be done in order for African agricultural sectors to be provided with the right investments and incentives to produce sufficient food and lay the basis for broad-based and sustainable economic growth.*

JEL classification: F13, O13, O55

## 1. Introduction

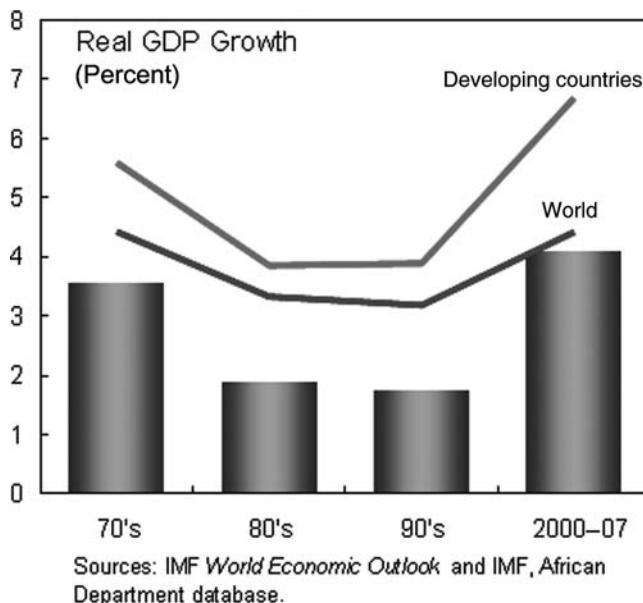
The food price crisis has forcefully brought to the fore the decades-old persistence of hunger in Africa, and, most acutely, Sub-Saharan Africa (SSA). It is apparent to those who have studied the food situation in SSA during the 30 years preceding 2005 that declining food prices during this period did nothing to solve the problems of hunger and malnutrition in much of the continent. The United Nations estimated that more than 20% of children under five were severely or moderately underweight in most of SSA between 2000 and 2004. The simple verdict is that a considerable distance remains to be covered towards achieving poverty reduction goal as expressed in the first Millennium Development Goal (MDG1).

Low food prices that characterised the three decades preceding 2006 dealt a bad hand to African agriculture as it discouraged investments in roads, irrigation and other infrastructure in this sector. Low food prices meant that returns to such investments remained fairly low; at least the misguided policies of many governments during this time implied exactly that. Diminished agricultural production was therefore the logical consequence of falling prices whose implications were exacerbated by bad policies that overtaxed the sector and led to diminished investments.

There is a general consensus that the spike in food prices in the mid-1970s was a catalyst for the Green Revolution; but, the complementary huge investments from the public sector in terms of irrigation, credit, marketing infrastructure and roads had to be brought to bear. Similarly, analysts agree that African agriculture is not going to deliver on economic growth, food security and sustainable environmental stewardship when its products cannot fetch remunerative prices or when the labour and natural resources that go into producing this food are undervalued through low economic returns or policies that force food prices to remain low.

The food price crisis of 2006–08 is one that should not be wasted. The tremendous suffering wrought by expensive food to many in Africa should be taken as the birth pangs to a new era of commitment to the most important sector in the welfare of many Africans, a sector that holds the key to lifting many Africans from poverty and hunger, a sector that is an indispensable building block for economic growth and prosperity. In the meantime, there must be palliative, short-term measures to dampen the pain of high food prices on those most hurt and to try to limit the economic damage that rising food prices might cause for macroeconomic health of many of these countries.

The purpose of this paper, within the aegis of African Economic Research Consortium (AERC) Bi-annual Conference, is to provide a



**Chart 1:** Economic growth in Sub-Saharan Africa.

contextual overview of how African countries have responded to the food price crisis, provide a critique of these responses and lay out broad outlines for what must be done so that African agricultural sectors can be provided with the right investments and incentives to produce sufficient food and lay the basis for broad based economic growth.

## 2. Brief Profile of SSA

### 2.1 Growth of African economies in the last 10 years

The last 10 years have seen SSA bring an end to more than two decades of economic stagnation and declining per capita incomes (Chart 1). This seemingly cathartic process has led to growth rates in GDP of 6% per year, with agricultural growth rates following closely at 4–5%. Solid global demand for commodities, greater inflows of capital and debt relief have helped lift growth. This turn of economic fortunes may continue albeit with some setback in 2009 but recovery is expected in 2010 ([World Bank, 2009](#)). Armed conflicts and political instability have abated in many of the region's most notorious trouble spots, thus leading to increased investment and growth, but in addition, income volatility

has fallen to near 30-year lows [International Monetary Fund]. Consequently, real per capita incomes are improving but there are poor performers that are still lagging behind.

The forgoing is not meant to paint a rosy picture in the economic situation in SSA. Despite what appears to be an emerging sense of progress towards sound fundamentals, the region faces risks. The prospects for non-oil commodity prices will be crucial to the future of SSA's growth outcomes. If there is a strong slowdown in major commodity importers, SSA's exports would be hit hard. Estimates published by IMF show that for every 1% decline in global GDP growth, the region's GDP growth will decline by about one-half of a percentage point. If the stresses in the global financial system are sustained, there is real danger that there could be serious reversals in investment flows, a fact that would undermine growth in the region.

It must be emphasised that the gains made by SSA remain fragile and the conditions for sustained and multi-year economic growth remain to be put in place. The stark challenges still facing SSA are seen from the fact that the proportion of ultra-poor (those living on less than half a dollar or less a day) in the region is still the greatest in the world. At the root of these daunting statistics is poverty: more than 260 million in SSA still live on less than \$1 per day.

The rudimentary state of Africa's rural infrastructure constitutes the single-most limiting factor to the continent's agricultural development. The density of paved roads per 1 million inhabitants ranges from 59 km in the Democratic Republic of Congo to 114 km in Tanzania, 230 km in Nigeria and 1,402 km in Zimbabwe ([von Braun et al., 2008](#)). Market infrastructure and rural electrification are in a poor state. This has the effect of hindering basic processing of Africa's staple foods to enable SSA agricultural sectors to climb the global value chain and reduce post-harvest losses. These conditions must not obtain for much longer if the optimism expressed above about SSA's economic prospects is to be sustained.

Another serious structural issue is the over-reliance on a limited range of export commodities, especially non-fuel commodities. According to [World Bank \(2009\)](#), of the top ten countries dependent on non-oil primary commodity exports, eight are in SSA (with percentage share of non-fuel primary commodities in total exports among the SSA countries in this group ranging from 79% in Burundi to 97% in The Gambia). This may trap these countries in what has become the resource curse which derives from the observation that countries dependent on primary commodities for their export revenues have tended, on average, to grow more slowly than more-diversified exporters.

It is apparent that despite the indications of recovery, the rate at which poverty levels are being reduced still falls far below what is expressed in MDG1 of reducing the number of the poor and hungry by half by 2015. During the past 10 years, estimates suggest that the rate of poverty reduction has been 6% per annum ([Badiane, 2008](#)). The achievement of MDG1 will require SSA not only to sustain the recovery process in the medium to longer term, but that this process must be speeded up over the next several decades. To do this, a deep transformation of the agricultural sector is essential, and that requires placing the sector high on the policy agenda. The trends on consumption, nutritional and production patterns presented in the next section show the gravity of food and nutritional deficits which will surely undermine economic development or poverty reduction efforts in SSA.

## **2.2 Trends in policy reforms**

One of the most dramatic economic policy changes in SSA during the last two decades or so has been the transition from economies dominated by governments to market-driven economic configurations. At the behest of international financial institutions, many African governments have adopted policies aimed at reorienting their economies towards market regimes with varying degrees of commitment and outcome ranging from partial and intermittent liberalisation to more comprehensive economic reforms.

These policy reforms have brought some progress in economic growth in many African countries but in some cases, agriculture suffered as governments withdrew from provision of basic services such as extension, credit and marketing. By and large, macroeconomic and trade policy reforms have led to a gradual reduction in indirect taxation of agriculture: for Africa as whole, the negative rate of protection dropped from -20% for the period 1975–79 to -10% in 2005 [[Food and Agriculture Organization \(FAO\), 2009a,b](#)]. However, the agricultural sectors of SSA are yet to enter a sustainable high-growth trajectory. It seems that the hard policy turn that has taken place in much of Africa has not been well designed for long-term agricultural growth, the basis for broad economic progress and poverty reduction. The core of the argument advanced by [Dorward and Kydd \(2003\)](#) is that where markets are not functioning because the foundations for market institutions are absent, then the current task of agricultural development in Africa (SSA in particular) requires policies that initially promote the development of economic

coordination mechanisms that are outside the ambit of markets (because markets themselves are still rudimentary). The process has to be managed in ways that will facilitate the smooth transition from reliance on non-market to market-based mechanisms, namely: transition from food deficit to food surplus, from emphasis on production of staple food crops to production of other (higher value and diversified) agricultural products and from an economy dominated by the agricultural sector (and by farm incomes) to a more diversified economy with a small and declining but highly productive agricultural sector.

It is encouraging that agriculture has now started attracting interest not just from Africa's political leadership but also from key development partners whose commitment to the sector appeared to be wavering after the continent's unmitigated failure to join the Green Revolution band wagon. The Maputo Declaration that led to the creation of the Comprehensive African Agricultural Development Programme (CAADP) is premised on the belief that agricultural growth is essential for improving the welfare of the vast majority of Africa's poor and hence a means to addressing poverty (MDG-1).

The CAADP signalled a major paradigm shift in African Union (AU) member nations' political support and re-alignment of their national policies and agendas away from budgetary neglect of agriculture. The programme is built around four pillars that characterise Africa's key challenges to agriculture-led economic development: sustainable natural resource management; increased food productivity; market access; and research and technological innovation. The principal goal of CAADP is to achieve agricultural GDP growth of 6% annually in all African countries by 2010 by increasing allocations to the sector to at least 10% of the national budgets. It is assumed that an agricultural growth rate of 6% can have significant impacts on poverty and food security.

For agriculture to lead economic growth in SSA, it needs increased investment, yet a study published by Regional Strategic Analysis and Knowledge Support System ([ReSAKSS, 2008](#)) suggests that in 2003 and 2005, African governments allocated, respectively, only 4.5 and 6% of their national budgets to agriculture. The Agriculture Expenditure Tracking System (AETS) survey of 2007 concludes that seventeen African countries still allocate less than 5% of the budget to agriculture; eight allocate 5–10% and only seven allocate over 10% [[African Union Commission \(AUC\), 2008](#)]. Re-aligning national policies to conform to the CAADP goals has not been easy. Although a recent

review of progress made in various regions of Africa towards achieving the stated goals cites several hindrances and challenges, a positive aspect of CAADP has been its success in achieving a coherent voice to Africa's commitment to agricultural growth and overall development, at least at the political level.

Clearly, policy reforms are still a long way in revitalising African agricultural systems to a degree needed to create growth, reduce poverty and eliminate hunger and malnutrition. Despite numerous past efforts, notably, the Millennium Development Goals (2000), the Maputo Declaration mentioned above, country poverty reduction strategy papers, the 2005 Paris Declaration, *World Development Report* on agriculture ([World Bank, 2007](#)) and the 2008 Accra Initiative, translating of words into action in SSA remains woefully pathetic. As Section 1.3 shows, some of the key indicators for Africa are now worse than they were in the 1970s (the pre-reform period). The section highlights the challenges that still face agriculture in SSA and the unsatisfactory food and hunger situation that the region's agricultural sectors are called upon to address.

### **2.3 Consumption and nutrition patterns**

The world is making only slow progress in reducing food insecurity, according to the Global Hunger Index (GHI).<sup>1</sup> The countries with the worst hunger indicators as shown by the high GHI score are predominantly in SSA. The most glaring trouble spots are found in the Democratic Republic of Congo, Eritrea, Burundi, Niger and Sierra Leone ([von Grebmer et al., 2008](#)). There is no doubt that civil strife and wars have contributed in large measure than any other factor in these worst performing countries but political instability that often seriously disrupts food production and distribution abounds in much of Africa. The most glaring hotspots as far as hunger and malnutrition are concerned are found in southern, eastern and central Africa (Figure A1).

Food consumption as expressed in kcal/capita/day is a standard measure used to track global-, regional- and country-level dietary energy intake. Data available from FAOSTAT ([FAO, 2003](#)) show that there has been a

<sup>1</sup> The GHI is a tool developed by IFPRI for regularly tracking the state of global hunger and malnutrition and is designed to capture several dimensions of hunger and undernutrition including: insufficient food availability (as compared to requirements), shortfalls in nutritional status and deaths that are directly or indirectly attributable to undernutrition. This definition goes beyond insufficient dietary energy availability at the household level, which is the focus of the FAO measure of undernourishment.

**Table 1:** Global and Regional Per Capita Food Consumption (kcal per Capita per Day)

Region	1964–66	1974–76	1984–86	1997–99	2015	2030
World	2,358	2,435	2,655	2,803	2,940	3,050
Developing countries	2,054	2,152	2,450	2,681	2,850	2,980
Near East and North Africa	2,290	2,591	2,953	3,006	3,090	3,170
SSA	2,058	2,079	2,057	2,195	2,360	2,540
Latin America/Caribbean	2,393	2,546	2,689	2,824	2,980	3,140
East Asia	1,957	2,105	2,559	2,921	3,060	3,190
South Asia	2,017	1,986	2,205	2,403	2,700	2,900
Industrialised countries	2,947	3,065	3,206	3,380	3,440	3,500
Transition countries	3,222	3,385	3,379	2,906	3,060	3,180

Source: FAO (2003).

general upward trend in dietary energy consumption globally. The data show that, on average, comparing the mid-1960s to the late 1990s, availability and energy intake increased by approximately 450 kcal worldwide, and in developing countries this increase was 600 kcal per capita per day (Table 1). However, this trend is not readily seen in SSA, with figures from this region showing that dietary energy consumption remained stagnant for most of this period. The opposite is true in East Asia where the increase over the same period has been almost 1,000 kcal per capita per day (mainly driven by increases in China) and in the Near East/North Africa region where the increase was almost 700 kcal per capita per day.

Dietary diversification is another complementary measure of food security and nutritional well being. According to a WHO/FAO report (2003), the increase in the quantity and quality of the fats consumed in the diet is an important feature of nutritional transition. How has Africa fared in recent times? There are considerably large variations across the regions of the world in the amount of total fats (i.e., fats in foods, plus added fats and oils) available for human consumption. The lowest quantities consumed are recorded in Africa, while the highest are recorded in parts of North America and Europe. From Table A1, it is clear that at the global level, there has been a remarkable increase in the intake of dietary fats over the past three decades but consumption in SSA has stagnated compared to the global trend (and that seen in North Africa). Indeed, over the 30-year period covered by data in Table A1, the amount of fat consumption per capita increased by 20 g globally and in North Africa and by only 4 g in SSA.

The per capita consumption of livestock products during the 1964–66 period in SSA was about 50% that of the world average, and only marginally lower than that of developing country average (the latter being 9.9 kg/

capita/year and the former 10.2 kg/capita/year). By 1999, per capita consumption in SSA was still 9.4 kg against a world average of 36.4 kg (just about 26% of world average) and the developing country average had grown from 10.4 to 25.5 kg. Projections to 2030 mirror similar patterns as those recorded for the 1997–99 period, with per capita consumption in SSA reaching 30 and 36% of world and developing country averages, respectively.

Data released in 2000 by FAO/WHO show that only a minute proportion of the world's population consumed the recommended intake of fruits and vegetables (i.e., 400 g/capita/day). Global trends for the production and supply of vegetables at the time showed wide variations among the regions (Table A1). The global annual average per capita vegetable supply was 102 kg, with the highest level in Asia (116 kg) and the lowest levels in South America (48 kg) and Africa (52 kg) according to FAO/WHO report (2003).

From Figure A2, it is apparent that the role of vegetables, milk and meat has marginally increased in developing countries, while the role of cereals and pulses has decreased somewhat over the 40-year period covered by the FAO data (FAO, 2007). SSA's contribution to these trends has been minimal because per capita consumption of major dietary items has remained largely stagnant in the region (Tables 1 and 2).

## 2.4 Productivity trends for main food commodities in SSA

Table 2 presents a range of agricultural indicators highlighting how SSA is dealt a bad hand in terms of the percentage of irrigated arable land; and, it has the worst indicators of any world region in terms of value added per worker, fertiliser use levels and productivity growth in both crops and livestock activities. As we mentioned earlier, agriculture's relatively poor performance in the past three decades is a symptom as well as a consequence of poor policy choices, policy reversals and lack of real political commitment to the sector; the latter manifested in the form of underinvestments in human capital, agricultural infrastructure and research/extension services.

The need for improving productivity is underscored by the trends in Table 3 that depict a weather-dependent agricultural sector. For three decades, between 1970 and 2000, annual growth rates for grains averaged below 3%; population growth outpaced agricultural output growth, hence output per capita actually declined over this period. For the continent as a whole, annual per capita production of cereals has fluctuated

**Table 2:** Agricultural Indicators by Region

	World	Africa	SSA	Latin America and Caribbean	Near East and North Africa	South Asia	East Asia and Pacific	Middle-income countries	High-income countries
Percentage of irrigated arable land irrigated	20.0	7.0	3.8	11.6	28.7	39.3	31.9	19.9	11.9
Added value per worker (\$/year)	645	416	285	3,028	1,859	412	461	335	17,956
Per capita cereal pro- duction (kg/year)	349	147	128	259	128	224	336	339	746
Cereal yield (kg/ha)	2,067	1,225	986	2,795	1,963	2,308	4,278	2,390	4,002
Livestock productivity (kg/ha)	193	164	128	198	147	121	150	191	248
Fertiliser use (kg/ha)	100	22	9	85	69	109	241	111	125

Source: FAO (2007).

**Table 3:** Grain Production—Annual Growth Rates (% per Year)

	1970– 80	1980– 90	1990– 2000	2000– 05	2005– 06	2006– 07	2007– 08	2005– 08
Global	2.9	2.2	0.4	1.8	−0.8	5.8	5.1	3.3
Major exporters	3.6	1.5	0.8	1.0	−6.4	11.5	4.5	2.9
USA	3.7	1.5	0.9	1.3	−7.6	22.8	−2.8	3.3
EU	3.5	1.4	−1.0	0.5	−5.8	−2.4	21.1	3.6
Argentina	3.4	−2.6	5.0	−1.0	26.3	1.9	−39.0	−7.7
Brazil	4.8	1.1	3.9	2.0	10.9	16.2	−7.7	6.0
China	3.7	4.0	0.0	1.5	6.2	1.0	5.6	4.2
India	2.1	3.2	2.1	0.2	1.0	8.5	0.9	3.4
Africa	2.6	1.3	1.8	4.4	9.6	−1.5	3.7	3.9
North Africa	1.9	3.3	0.0	5.9	19.1	−18.1	3.6	0.3
SSA	2.8	0.8	2.3	3.9	6.8	4.1	3.8	4.9

Source: FAS, USDA, Production, Supply and Distribution Online (adapted from Abbott and Borot de Battisti, 2011), <http://www.fas.usda.gov/psdonline/psdQuery.aspx>.

between 140 and 175 kg during the 1990s, far below the global average of 358 kg. To a large extent, irregular and unreliable rainfall determines yield levels and the state of food security for the vast majority of African producers.

The food sub-sector, usually in the hands of resource-poor smallholders, generally lags behind other agricultural enterprises, particularly in terms of adoption of improved production technologies (high yielding seed varieties and fertiliser) and access to markets. Africa bears the dubious distinction as the only region where the average food production per person has been declining over 40 years prior to 2002, putting large segments of the population at risk for food insecurity and malnutrition.

Recent estimates, however, indicate a break from this past gloom: the agricultural sector in SSA as a whole grew by more than 3.5% in 2008, compared to a population growth rate of 2% (FAO, 2009b), and grain production growth rates have been kept above 3%. There have been exceptions to the general positive trend in agricultural production: output fluctuations point to underutilisation of the irrigation potential and poor access to fertiliser by the majority of smallholder farmers. There are regional variations in agricultural performance, with eastern and southern Africa somewhat lagging behind northern and western Africa. Maize that features prominently in national food security strategies, especially in

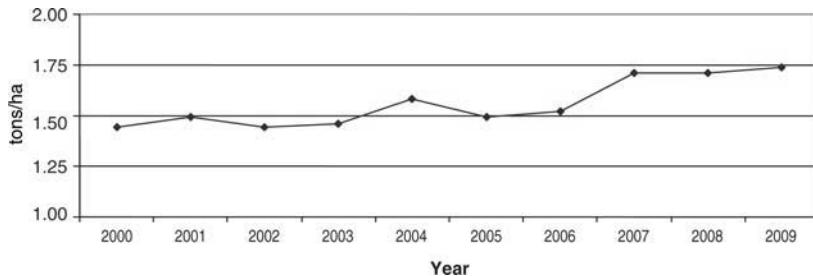


Figure 1: Maize Yields in SSA (FAOSTAT).

eastern and southern Africa, recorded stagnated yields for the past 10 years (Figure 1).

Access to rural credit that partly explains poor adoption of technologies by smallholder farmers (who constitute the bulk of food producers in SSA) is currently being addressed in selected countries by input subsidy programmes particularly aiming at increased use of improved seed varieties and fertiliser as well as weather-indexed insurance schemes (Table A2). However, serious concerns have been raised regarding sustainability of these agricultural subsidy programmes in Africa, considering the fact that some of the success stories tend to be in countries implementing projects that are heavily underwritten by foreign development partners (e.g., DfID, in the case of Malawi). In other cases (e.g., Kenya, Angola, Rwanda, Mozambique and Uganda), such policy strategies have not registered any meaningful impacts on agricultural productivity because they have not been adequately scaled up or due to poor targeting and other administrative hitches.

## 2.5 Current production and import situation in low-income and food-deficit countries

Focusing on the low-income and food-deficit countries (LIFDCs), a recent FAO report on crop prospects and food situation in the world (FAO, 2009a) shows that in eastern and western Africa, and in Asia, there is an increase of 3.4% in the aggregate production of the eighty-two LIFDCs as a group in 2008 compared to 2007 (Table 4). The largest producers, China and India, accounting for some one-third of the aggregate output, increased their cereal outputs, respectively, by 4.4 and 1% from the good levels of 2007. Excluding these two countries, the output of the rest of the LIFDCs still rose by a significant 4%. This is a positive development and marks a recovery

**Table 4:** Cereal Production of LIFDCs (Million Tons)

	2006	2007	2008	Change: 2008 over 2007 (%)
Africa (forty-four countries)	127.2	117.0	129.4	10.6
North Africa	30.1	22.5	25.9	14.9
Eastern Africa	32.9	32.6	34.4	5.4
Southern Africa	12.0	12.3	12.1	-1.6
Western Africa	49.2	46.4	53.8	15.9
Central Africa	3.0	3.2	3.3	1.5
Asia (twenty-five countries)	748.7	789.2	804.7	2.0
CIS in Asia	13.2	13.6	13.2	-3.0
Far East	721.0	760.4	782.1	2.9
China (Mainland)	385.6	400.3	417.8	4.4
India	195.2	212.8	214.1	0.7
Near East	14.4	15.2	9.3	-38.4
Central America (three countries)	1.7	1.8	1.8	0.8
Oceania (six countries)	0.0	0.0	0.0	0.0
Europe (four countries)	9.8	9.2	12.7	37.1
Total (eighty-two countries)	887.3	917.2	948.5	3.4

Source: FAO (2009a).

in output after the declines in the previous years. An increase in per capita cereal consumption (food and feed uses) and replenishment of stocks in LIFDCs was predicted for the marketing years 2008/09 or 2009.

Despite an improved 2008 cereal production, the aggregate cereal imports of the LIFDCs as a group in marketing years 2008/09 or 2009 was forecast at 87 million tons, a significant increase of some 6% from the level of the previous year. This reflects higher imports in large importing countries in the Near East (Iraq, the Syrian Arab Republic and Afghanistan) and Africa (Zimbabwe, Kenya) where outputs were sharply reduced by drought, coupled with replenishment of stocks in several countries, notably in China. In addition, other LIFDCs in Asia and Africa are increasing their cereal inventories which were at low levels following releases in the previous season to mitigate the impact of high international prices and in view of the current price volatility in international markets. Notwithstanding the increase in import volumes in 2008/09, the cereal import bill of the LIFDCs is anticipated to decline on account of the sharp decline in international prices in the second half of 2008. FAO's forecast put the aggregate cereal import bills of LIFDCs in 2008/09 at US\$ 29.9 billion, 22% below the previous year's record level of US\$ 38.2 billion (Table 5).

**Table 5:** Cereal Imports to Increase in 2008/09 despite Improved Production but Lower Import Bill

	2007/08 or 2008 actual imports	2008/09 or 2009			
		Requirements <sup>a</sup>		Import position <sup>b</sup>	
		Total imports:	Food aid	Total imports:	Food aid pledges
Africa (forty-four countries)	38,978	41,011	2,686	12,265	1,308
North Africa	18,193	18,242	0	8,630	0
Eastern Africa	5,532	5,910	1,555	1,697	930
Southern Africa	3,153	4,013	593	1,851	335
Western Africa	10,482	11,068	453	81	44
Central Africa	1,619	1,778	85	7	0

Note: Totals computed from un-rounded data.

<sup>a</sup>The import requirement is the difference between utilisation (food, feed, other uses, exports plus closing stocks) and domestic availability (production plus opening stocks).

<sup>b</sup>Estimates based on information available as of mid-January 2009.

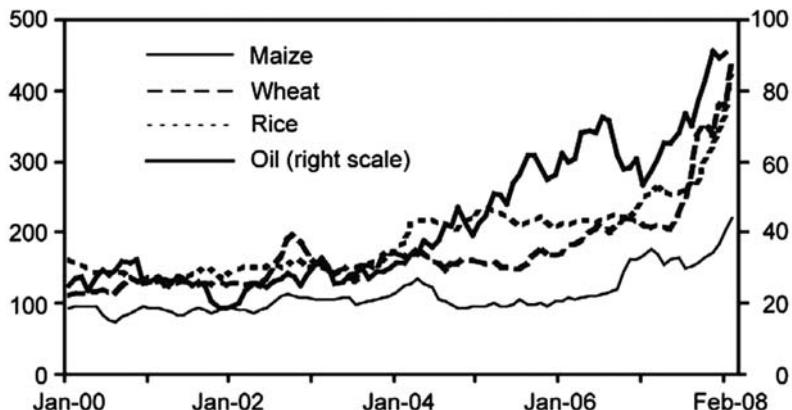
### 3. Recent Food Price Movements

Until the food price alarm went off, discussions on how to reduce hunger and malnutrition took place in an environment of declining food prices. According to the IMF (2008), real food prices declined by about 75% between 1974 and 2005. Since 2005, however, real food prices have been on the rise (Figure 2). According to IFPRI's report on the GHI, the FAO's food price index rose by 9% in 2006, 23% in 2007 and more than 50% between May 2007 and May 2008. Prices have since fallen but remain above their long-term trends: the FAO food price index for 2008 averaged 24% above 2007 and 57% above 2006 (FAO, 2008a,b).

During the three years to 2008, a broad variety of food commodities were affected by rising prices. It has been shown that prices of wheat and poultry have doubled since 2003, those of maize and butter three times and that of rice four times. Section 2.1 outlines factors which have been identified in the literature as driving this state of affairs.

#### 3.1 Main causes of price escalation

Food price movements spanning a period of over 70 years have fully debunked the predicted Malthusian apocalypse. Real prices for major



**Figure 2:** Recent Food Price Movements in Global Markets (Source: IMF, 2008).

food commodities, maize, wheat and rice, have been on a steady decline thanks to agricultural mechanisation, technological advances in plant breeding and increased use of inorganic fertilisers and herbicides: the only major spikes in prices occurring in the mid-1970s and recently in 2006–08. It is now safe to say that the crisis in the mid-1970s was a short-term phenomenon in an otherwise declining trend. As already noted above, food prices started falling in July 2008 but remain above their long-term trend. In trying to explain whether food prices will continue rising and hence signal the end of ‘cheap food’, analysts have attempted to identify the underlying causes of price escalation in 2006–08 compared to the factors that were responsible for the spike of the 1970s. The latter is said to have been caused largely by weather-related factors and the oil crisis that led to supply shortfalls in the face of rising demand particularly due to the combined effects of increasing population and per capita incomes in developing countries. According to FAO (2009b), among others, the 2006–08 food crisis appears to have been precipitated by demand-side factors some of which may persist; this explanation is, however, still contentious as we briefly highlight in the following.

The increase in food prices reflects a complex interplay of long-term and temporary factors. Factors that are going to have permanent effects and which have been at work in recent years include biofuels production in the USA and European Union (EU) which accounted for almost half of the increase in consumption of major food crops in 2007 (IMF, 2008). Increasing demand for fine grains and livestock has been brought about by growth in per capita income in high-growth developing countries

such as China and India. High petroleum prices and hence higher costs for fertiliser products have also contributed to higher prices for all agricultural commodities. Other factors whose effects may be reversible include droughts, especially in countries south of the equator, with resultant reduction in wheat production in Australia in 2007. Generally, inelastic supply response, increasing consumer demand and other emerging trends (such as biofuel production) have all been part of the story.

### *3.1.1 Supply and demand-side factors*

The supply response to increasing global demand for food has been fairly inelastic. Although some observers dispute the theory that yield growth is reaching a plateau on a global scale, output stagnated or at least did not match demand growth in China, the EU, India, and the USA, and Australia's production has been affected by drought. It is apparent that overall, productivity growth in agriculture along past trends is simply too low to cope with the increase in demand. Globally, supply response has been in the region of 1–2% when prices increase by 10%. With rising prices, it is not easy to say for sure how much farmers will respond although economic theory predicts that there should be positive supply response catalysed by these price increases.

Farmers in Africa, however, may be left further behind due to their poor integration into international markets and due to lack of strong infrastructure, agricultural services and institutional capacity weaknesses (for both private and public sectors). Moreover, the production response to high prices is impeded by land and water constraints, as well as by underinvestment in agricultural innovation and deficient financial system for agriculture. Land available for cultivation is limited (with per capita availability of cultivable land in SSA now hovering around 0.7 ha), and the physical and environmental costs of bringing new land into production have been prohibitive.

Rapid GDP growth and the expansion of the middle classes in India, China and the economies of Asia which had GDP growths of about 9% a year between 2005 and 2007 have heightened demand for food. Not to be left behind, SSA also experienced rapid economic growth of more than 6% in the same period. Growing household incomes, burgeoning urban populations and changing food consumption preferences all have led to increases in domestic consumer demand for food in many countries. World consumption patterns also shifted heavily towards vegetables, fruits, meat and dairy. The effect is greater demand for grains in livestock

production but also these new patterns of consumption cut into land and water use for grain production.

### *3.1.2 External factors putting pressure on food prices*

The biofuel sector now receiving much political support and subsidies in the USA and EU (due to a need to reduce reliance on petroleum) appears to have fuelled a global rally in food prices in a major way. The result is that energy and agricultural prices tend to move in tandem. However, the aforementioned subsidies (estimated at US\$11 billion and US\$13 billion a year) and the high oil prices that were experienced in the second half of the 2000s have massively provided farmers in these countries with incentives to shift cultivation to biofuel crops. In the USA, for example, as much as 30% of maize produced goes into ethanol production compared to 5% 10 years ago. Out of an increase in global maize utilisation of about 40 million tonnes in 2007, around 30 million tonnes was taken up by ethanol plants, the bulk of the latter occurring in the USA, with the EU bio-diesel production predominantly using rapeseed (Cooke and Robles, 2009). Not to be overlooked are the subsidies in developed countries that have for many decades undercut developing country farmers in international markets, thereby stifling the development of an efficient international food trading system that is capable of handling such phenomena as the recent escalation in prices.

Denominating international food prices in US\$ has significant influences on prices and exposure of food markets, depending on exchange rates between the US\$ and domestic currencies. The dollar depreciated significantly during the 2006–08 period thus generating a milder price fluctuation in real terms for the recent crisis compared to the one of the 1970s. It is also worth noting, first, that prices did not rise uniformly: those that SSA depends on for exports such as coffee, cocoa, cotton, rose only moderately compared to staple cereals such as maize, wheat and rice. Second, prices started declining in July 2008 possibly due to induced production and supply (that was however not widespread in developing countries, except in Brazil, India and China), ensuing global financial crisis that dampened consumer demand and declining prices for crude oil. The implication of this is that price escalation is not the only concern for SSA; there is also the issue of price volatility that raises a lot of problems, particularly for resource-poor farmers. Agricultural commodity price volatility, and hence income volatility, limits access to credit and adoption of innovations that could increase responsiveness to rising prices.

### **3.2 Impacts of rising food prices on food security**

#### *3.2.1 Price transmission and supply response*

Rising food prices offers an opportunity to African farmers to raise their farm incomes but actual benefits depend on market structure, magnitude of commodity price increase relative to increase in input costs (value–cost ratios) and whether farmers are net sellers or buyers. Government policies (such as tax and tariff reductions and fertiliser subsidies) are also important since they tend to shield domestic consumers and producers from escalating border prices for imported foods and agricultural inputs. African markets for main staples such as maize, wheat and rice are usually oligopolistic and government interference, in the name of food security, often distorts price formation. In SSA in particular, there is a wide variety of non-tradable traditional foodstuffs (such as sorghum, cassava, banana, yams and sweet potatoes) that are less prone to impacts of variances in global food prices whose output may have been stepped up especially by households that are net food buyers.

Market imperfections (arising from public policies, access to information and poor infrastructure) in SSA imply that there can be pockets of deficits and gluts occurring simultaneously, with price variations that are not directly related to changes in global prices. With respect to the 2006–08 crisis, the available literature (e.g., Abbott and Borot de Battisti, 2011) indicate that:

- prices of imported foodstuffs rose by a lower margin compared to the increase in prices of farm inputs (fertiliser) and oil (for transport);
- receipts from African agricultural exports of horticulture, cotton, coffee, tea, tobacco and cocoa did not compensate for food import bill either because African countries are largely net food importers or because the rise in the continent's export crops was less dramatic;
- despite various factors that tend to mute transmission of international grain prices to domestic markets, African farmers, by and large, responded positively in line with other major grain exporters, with SSA registering about 14% increase in production of food grains between 2006 and 2009.

#### *3.2.2 Macroeconomic and welfare impacts*

Despite the positive signals that high food prices are sending for production, the social and macroeconomic implications of rising food prices can be severe. Considering that food represents a large (sometimes the largest share) of a poor household's total expenditure, the global increases in

food prices hit poor consumers, and poorer countries, hardest as high prices are translated into food inflation and increased cost of living. Organization for Economic Co-Operation and Development (OECD) and Food and Agriculture Organization of FAO (2008) reports a high correlation between food inflation and general inflation in Senegal, Kenya, South Africa and Botswana: for Kenya, the KIPPRA Economic Report (2009) indicates that food inflation (estimated at about 25%) accounted for about 12% of the country's general inflation between 2007 and 2008. Where governments attempt to shield local producers and consumers through subsidies and other transfer strategies, there will also be budgetary implications as development programmes are sacrificed.

Different economic groups within countries were affected differently. Whether countries are net importers or exporters of cereals is an important point to their vulnerability to increased prices. Those who have net-exporter positions have the opportunity to benefit from improved terms of trade, while net importers (such as Angola, Chad, Burundi and Ethiopia) inevitably suffer because their food import bills rise as they struggle to meet domestic food demand in an international market where some countries are discouraging exports. Higher food prices occasioned serious negative impacts on countries with the highest rates of hunger. This is so because none of the countries with extremely alarming GHI (Burundi, Democratic Republic of the Congo, Ethiopia, Liberia, Niger and Sierra Leone) are net cereal exporters (von Grebmer *et al.*, 2008). Consumers of imported food items, especially urban consumers, have also been badly hit.

Producers of export crops have gained, and rural farmers who happen to be net producers of key staples have been cushioned somewhat and may even have benefited if domestic markets worked well in terms of price transmission. There is a preponderant view among analysts (e.g., Jayne *et al.*, 2001; Ivanic and Martin, 2008) that many smallholder farmers are net buyers of food and will therefore lose from high food prices but, as Kharas (2008) argues, this kind of reasoning represents only a static perspective and thus fails to account for the supply response and income effects that are likely to follow.<sup>2</sup>

<sup>2</sup> Given that farmers in developing countries are a heterogeneous group, they will tend to face differing market scenarios. Kharas cites studies that model the supply response in specific country circumstances and find that, in several large countries, the positive supply response on incomes dominates the negative impact on consumption of higher food bills. He also cites a study by The Carnegie Endowment for International Peace released in 2008 on the impact of a 50% rise in world rice prices on India. It concludes

High food prices can help reduce poverty among farmers and farm workers in the long term, as they bring additional income to areas where 75% of the world's poor live. However, this will happen only if governments invest in infrastructure, including roads and marketing institutions that get farm products to markets and inputs to farmers. The need to help vulnerable groups deal with high food prices (urban poor and rural landless) means that massive amounts of resources will be diverted to food relief at the expense of growth-enhancing investments such as rural infrastructure, input supply and credit systems. Thus, diversion of resources to food relief can be seen as a threat to long-term economic growth. Moreover, there are fears that aid dependency syndrome among vulnerable regions, and households may lead to crowding out of private sector participation, thus undermining the development of viable food markets and local capacity to raise food production and deal with perennial food deficits.

The question then becomes how to respond in a way that will help mitigate the negative welfare outcomes of high food prices on the most vulnerable while at the same time ensuring that policy actions needed for long-term agricultural development and increased food supply are not undermined. The following section reviews actions taken so far by countries in SSA (Sections 3.1 and 3.2) and the long-term actions required at country and regional levels to increase food supplies and trade (Section 3.3).

## **4. How African Countries Manage Implications of High Food Prices**

### **4.1 Dealing with emergencies**

The core policy aim in case of emergencies arising from food price shocks is to minimise welfare losses. Leveraging resources in advance will ensure that emergency response does not entail diverting resources from investments needed for long-term agricultural development (e.g., ensuring that input and credit programmes continue to run). Focusing on the most vulnerable members of the population should be a chief concern for government technocrats. Targeted cash transfer can be a way to

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that India's rural population of 700 million would benefit from this increase. The relative income of the poorest rural households would rise by 4.5%, while the most marginalised groups, like scheduled tribes, would have a 6.4% increase in real income.

implement these emergency programmes. The targeted nature of cash transfers mean that they require less administrative capacity and minimise diversion of resources to less needy groups. It is worth emphasising that the policies adopted must be presented as temporary to avoid creating an unnecessary and unsustainable fiscal burden. In terms of resource mobilisation for emergency response, it is possible, even in poor countries, to set aside funds for social safety nets.<sup>3</sup>

Further steps that could be considered include providing the World Food Programme (WFP) with a more stable source of financing and giving it a line of credit so that it can move quickly when food prices are unusually high. The international community could also better coordinate the management of grain reserves so that they can be brought to the aid of those in need more easily. An important starting point would be to use regional economic cooperation institutions (RECs) to build their capacity for disaster preparedness and response.

#### **4.2 Short- and medium-term strategies**

Generally, the crisis brought by food and fuel price increases has led governments to increase funding of existing social safety net programmes such as subsidies, conditional transfer programmes and food distribution schemes. Donors, banks and other international agencies pledged funds for addressing short- and medium-term effects of the food crisis, but putting in place a comprehensive strategy for SSA has always been a daunting task, considering the inherently weak internal institutions entrusted with implementation and recurrence of other equally important crises (such as natural disasters and civil strife). As one crisis after another replicated over the continent, despair and foreign (donor)-dependency syndrome has tended to pervade, thus killing innovations for internal solutions.<sup>4</sup> The proliferation of external interventions, task forces and funding pledges appears to create more confusion and inertia among

<sup>3</sup> For example, Chile has implemented a well-targeted programme which cost 0.4% of GDP, and in Ethiopia lifting VAT on food grains, raising the wage for the cash for work programme and distributing wheat to the urban poor at lower prices cost about 1% of GDP.

<sup>4</sup> For example, the CAADP that aims at increasing allocations to agricultural sectors to at least 10% of national budgets got a commitment to the tune of US\$60 million from several development partners with interest in Africa and agriculture (the Multi-Donor Trust Fund) to jump start CAADP's operations. This pledge is yet to be matched by contributions from African nations that signed the Maputo Declaration that created CAADP in 2003, thus raising concerns about sustainability.

internal mechanisms for generating ideas and resources to deal with the food issue through agricultural development and supportive services such as roads, rural electrification, telecommunication and functional markets.

Countries in SSA adopted specific actions to deal with the crisis, the aim being principally to mute inflationary trends on the economy and protect vulnerable groups, for example, by reducing relevant taxes on food items or imposing export bans. Although social protection is increasingly being seen as a fundamental aspect of strategies for reducing poverty, they are not only costly but are also frequently dogged by poor targeting, thus bypassing those in need. The practice of cushioning domestic markets from fluctuations in border prices tends to dampen incentives, thus minimising long-term prospects for achieving food security through increased production. The success of safety net programmes will thus depend on their timing, how social equity goals are balanced with long-term production efficiency interests and, last but not least, how the programmes are administered. Some of the policy strategies, for example export bans, will be potentially more harmful to achieving domestic food surpluses hence lowering food prices, while others, such as tax reductions, may have minimal impacts on domestic prices. Although non-tariff trade barriers persist, regional integration has led to drastic reductions in import taxes for agricultural commodities in much of Africa and further tax reductions may have little effect on controlling price escalation. In theory, most of the SSA countries are quite small in terms of the potential impact they can individually bring to bear on global markets, implying that import taxes would be ideal for reducing excess demand. The efficacy of this strategy is however compounded by several factors, among them: inelastic demand for food, imperfect domestic markets, information asymmetries, poor infrastructure and export restrictions by major global suppliers.

Some of the measures taken by countries are shown in Table A2 (adapted from FAO—GIEWS, 2008; GIEWS—Global Information and Early Warning System). Understandably, the main concern has been to support consumers, because in SSA many of these are poor rural and urban households who spend the greater portion of their incomes on food. Therefore, with stagnant incomes and rising food prices, these poor households suffer considerable welfare losses. A number of countries have implemented cash transfers, food-for-work programmes and ration schemes as social mechanisms for protecting the most disadvantaged. Nearly a dozen African countries were implementing tax reductions on

food price control regimes and subsidies, while others have been drawing from the strategic reserves to help stabilise supplies.

Measures targeted at the supply side of the equation have also been implemented. These have revolved around input price interventions and subsidies implemented through voucher systems of distribution and guaranteed minimum prices for outputs. Tables 6 and A2 show that countries in SSA have also implemented trade policies specifically aimed at increasing exports and restricting imports.

It is important to notice that some of these responses may have long-term costly consequences for food security for SSA. However, the wide diversity of the economies and policy preferences make it rather risky to specify the likely outcomes of the different strategies adopted to deal with food crisis. We summarise some of these outcomes in Table 6; for example, import restrictions and relief food grain may be beneficial to consumers but only provide a one-off result, and the benefits are quickly exhausted not to mention that in instances where the government derives considerable revenue from trade taxes, these actions may badly affect its operations. Where there are extreme restrictions on exports, there may be great disincentives for many farmers, leading to reduced production due to low domestic prices and high input prices (since inputs remain tradable). When countries engage in unilateral and uncoordinated efforts aimed at export restrictions, the result may be to worsen price instability in regional and international markets, especially if the country imposing the trade policy is relatively large in the market. Safety net programmes must be carefully designed to ensure there is administrative and institutional capacity to implement them.

Efforts at providing subsidies and other transfer systems are plagued by leakages arising from non-targeting, low institutional capacity and corruption. There is also the danger of crowding out private food and input markets if these programmes are not designed in such a manner that they can be delivered through existing marketing infrastructure. It is therefore crucial that these programmes combine the more common transfer mechanisms with programmes that will help farmers, especially the small ones, to respond to market incentives.

#### **4.3 Long-term strategies and policy actions**

As already pointed out in Section 2.1, prices of grains and other basic food commodities started falling in the second half of 2008 but they remain significantly above their 2007 levels. In SSA, the impacts of the crisis on

**Table 6:** The Implications of Current Short-term Policies to Respond to Rising Food Prices

<b>Policy range</b>	<b>Policy action</b>	<b>Some countries implementing</b>	<b>Key outcomes/consequences</b>
Short-term policies	Conditional cash transfers such as food/cash for work	Burundi, Eritrea, Kenya, Malawi, Zimbabwe	High fiscal costs unsustainable for many countries
	Self-targeted food-for-work programmes	Burundi, Egypt, Eritrea, Kenya, Libya	More manageable than administrative targeting, physical food transfer may lead to significant leakages
	Emergency food aid distribution	Burundi, Kenya, Libya, Tanzania	Physical food transfer may lead to significant leakages, disincentive to producer supply response
	School feeding programmes	Burundi, Egypt, Kenya, Libya Zimbabwe	Fails to address malnutrition in infancy
Medium-term policies	Reduction in tariffs and other taxes (VAT) on key staples	Burundi, Djibouti, Kenya, Ethiopia, Madagascar, Sudan, Tanzania and Zambia	Reduction in revenues
	Food consumption subsidies for the poor, e.g., price subsidies and ration cards	DRC, Eritrea, Mauritius, Rwanda, Zimbabwe	May create disincentives for domestic producers if entrenched, require high fiscal costs
	Bans or taxes on grain exports	Egypt, Ethiopia, Kenya, Tanzania	Limited impact on domestic prices, negative earnings for producers and exporters, sharp price fluctuations for net importing countries
	Grain buffer stock policies	Ethiopia, Kenya, Sudan, Tanzania, Zambia	High fiscal costs in terms of management and governance

(continued on next page)

**Table 6:** *Continued*

<b>Policy range</b>	<b>Policy action</b>	<b>Some countries implementing</b>	<b>Key outcomes/consequences</b>
Long-term policies	Increased investment in agricultural sector R&D	Kenya	
	Investment in infrastructure to improve inland transport links between surplus and deficit areas	No record	
	Support of an equitable international trading system	No record	
Other trade policies	Increase food imports	Ethiopia, Kenya, Rwanda	
	Lower import tariffs on food	Kenya	
	Lower import tariffs on fertiliser	Kenya	

Source: ASARECA (2008).

domestic markets continue being felt with many pockets of highly volatile and rising food prices. Although World Bank economists expected that food prices would fall a further 20% in 2009, prices are likely to remain much higher over the next 20 years than during the 1990s, partly because of higher energy prices and the influence of biofuel demand for food crops ([World Bank, 2009](#)). The opportunity presented by the rising prices must be exploited to put in place conditions that will create a viable and equitable food system within countries and globally. These could fall within the broad rubrics highlighted in what follows.

#### *4.3.1 Increasing agricultural productivity*

Africa's comparative advantage is largely in the area of agriculture but the continent's wide diversity (in terms of various factors such as agro-ecological zones, culture, religion, resources endowments and economic development) tends to pose serious challenges to meaningful transformation of the sector through conventional intervention strategies. Recently, there has been a renewed interest on agriculture, not just by countries in SSA but also by key development partners whose commitment to the sector appeared to be wavering after the continent's unmitigated failure to join the Green Revolution band wagon. The NEPAD/CAADP programme has attempted to galvanise Africa's political interest in agriculture as a leading sector in poverty reduction and industrialisation strategies. However, questions are arising as to why many countries are not embracing the CAADP principles and why the front runners such as Rwanda are not seeing increased investment flows to their agricultural sector.

Many African countries have elaborate development plans but there is still a serious disconnect between planning and implementation. In particular, there is a need for clear articulation of high-impact areas within agriculture where resources should be allocated on a priority basis in order to have the largest impact on agricultural growth and poverty reduction. The components of agricultural spending that need attention are agricultural administration, research and extension, irrigation and rural infrastructure such as feeder roads. IFPRI simulation studies show that SSA countries will need to boost their annual agricultural growth to 7.5% per year in order to achieve MDG1 requiring agricultural spending to increase to US\$13.7 billion per year. If SSA countries fulfil their commitments to allocate 10% of their budgets to agriculture under the CAADP framework, the MDG1 target would require additional or incremental spending of US\$4.8 billion per year.

There is no route to increasing agricultural productivity that will not involve radical increases in fertiliser use in SSA's agriculture. According to the International Fertilizer Development Center, fertiliser use is extremely low in many SSA countries, averaging 8.8 kg per hectare (ha). If fertiliser use gradually rises to 50 kg/ha, a level that has already been reached by most middle-income countries and which is a target established by an African Fertilizer Summit (in 2006), total fertiliser use will increase by five to six times. The total cost of fertiliser and improved seeds required to achieve an agricultural growth rate of 7.5% is estimated at more than US\$9 billion a year. Considering the current level and trend of fertiliser and seed use, the incremental cost of these inputs is about US\$6.8 billion per year. These kinds of expenditures are obviously beyond the capacity of SSA's poor farmers.<sup>5</sup>

Fertiliser use correlates closely with area under irrigation, and here again, African countries (with a handful of exceptions) significantly lag behind their counterparts in Asia.<sup>6</sup> As the variability of rainfall patterns increases due to climate change, the risks of using chemical fertilisers in degraded tropical soils will increase, thus putting into jeopardy any efforts aimed at increasing crop productivity. Although the answer to the dilemma of low fertiliser consumption may lie in exploiting the region's irrigable but idle land, there are inherent socio-economic and environmental challenges that cannot be wished away: prohibitive investment costs for large-scale irrigation projects, lack of technical know-how among smallholder farmers, low value-cost ratios for the irrigated crops, competing uses for available water and land resources and undesirable environmental impacts.

After the 2006–08 food crisis in the face of dwindling stocks among the few major exporters, more countries have been edging towards policies that promote food self-sufficiency. The desire to meet food demand for large populations with increasing per capita incomes, especially in China and South Asia, has created a new resource curse for Africa: land grabbing. Africa's idle but irrigable land is being sold out to foreigners in the face of alarming fragmentation of farmland in densely populated regions of the continent. The issue of land grabbing is causing a lot of murmurs

<sup>5</sup> It is perhaps time for policy-makers in SSA to see public expenditures in the provision of fertiliser (and the infrastructure for its delivery) in the same vein as those for roads, ports, schools and hospitals.

<sup>6</sup> Out of a potential irrigable area of about 600 million ha in the COMESA region, only 2% is under irrigation ([WBCSD and IUCN, 2008](#)) and 75% of crop production in all COMESA countries, except Egypt and Sudan, rely on rainfall.

from the civil society groups that are warning of dire future consequences especially in countries (or farming systems) where land tenure and ownership rights are still unclear. Agricultural land fragmentation, on the other hand, is being induced by rising rural population and unemployment. Considering widespread underuse of irrigation and fertiliser, the two phenomena (loss of idle land and fragmentation) constitute a major threat to sustainable food production in SSA.

#### *4.3.2 Making advances in science and technology relevant to African agriculture*

Is African agriculture underdeveloped because of lack of agricultural science or applicable technologies? Is the problem lack of funding for research (both basic and applied)? These may not be the real problems considering that many technologies continue to lie on the shelves of NARS, CG Centres and Ministries of Agriculture. The technologies may not be at the frontiers of science *per se*, but they would have huge potential impacts on productivity if they were to be made available to farmers. We briefly highlight in what follows some key factors pertinent to the debate on the relevance and application of science and technology in African agriculture.

*4.3.2.1 Plant breeding and application of biotechnology* One of the most important starting points for a productive SSA agriculture will start with productive plant and animal germplasm and then providing the conditions for realising this genetic potential. High-quality germplasm obviously provides the basic building blocks for continued successive harvests. The major problem facing African agriculture is that there is staggering agrobiodiversity that has been preserved as a necessary mechanism for adapting to the preponderant low-input systems and diverse ecological configurations. These varieties, while resilient in local microenvironments, do not have the genetic composition to respond to high-input agriculture. But it is important to realise that many of the crop varieties that have been selected are no longer able to produce adequate yields to feed a rapidly growing population. There is a need to push for high-end breeding efforts in SSA and to use market channels to get these seeds to farmers under different environmental conditions.

Hybrid technology remains the most visible entry point despite the attendant concerns about their high costs (partly due to the requirement of fresh seeds each season). Plant breeding science should focus on cost-effective and faster pathways for generating hybrid seeds to make these

more affordable. Where reducing these costs is not immediately possible, the CGIAR system should be brought in. The CGIAR–private sector cooperation will bring public resources to bear on the production of high-quality germplasm and make these affordable to African farmers. The final delivery, however, should be left largely in the hands of the private sector.

Prudent adoption of biotechnology methods in the propagation, multiplication and production of planting material, especially with vegetatively propagated species, will help speed the generation of germplasm. Obviously, where there are concerns about genetically modified organisms (GMOs), the production of improved varieties by conventional breeding will largely bridge the productivity gap for African farmers, as African systems generate the capacity to handle GMOs safely. African policymakers and scientists must resist the temptation of getting embroiled in unhelpful ‘biopolitics’ rhetoric. Biotechnology offers great promise in generating the high-quality seeds and planting materials needed for SSA farmers, and the challenges of food production and poverty reduction are just too great to be subjugated to convoluted political discussions (as seen in some advocacy and policy circles) that tend to undermine rational debate on the merits of biotechnology.

*4.3.2.2 Application of information technology tools* In the information and internet age, an important aspect of agricultural development will be application of information technologies in data management and information clearing in many areas of agriculture, not least in the areas of world food situation. There is tremendous amount of information on world food situation and shifts thereof. Yet this information is rarely available where it is needed neither at the right speed and timing nor at the appropriate level of aggregation. There are also access issues where those who require information most do not have access to it. It is not unusual to find that policymakers and public officials, NGO representatives and private sector players do not have high-quality information for making good decisions.

Institutional networking is an important innovation in information sharing. These networks should be constructed to provide reliable, appropriate information and decision-support tools for national policymakers. This is where the application of web technologies becomes relevant. The East African region will soon have an increased supply of bandwidth arising from the completion of several fibre-optic cable projects connecting its coastline to the major internet gateways in the Middle East. The creation of web-based information portals which do not duplicate those operated by other organisations such as Agriculture Organization of the United

Nations (FAO), the World Bank or the CGIAR will be critical. The services should be provided as an international public good designed to be accessible to the wider public and must be effectively publicised with training opportunities offered to key users; alternatively, the tools can be designed in a way that makes it possible for self-training.

*4.3.2.3 Human capacity building in science and economic policy* The hard times that have hit many Universities in SSA must not be allowed to continue. Funding for public universities must be strengthened and all avenues of leveraging resources used: for example, philanthropic organisations, financial markets, the private sector national treasuries and international development agencies. There is a need for developing highly qualified cadres in life sciences and economics and policy analysis. African agricultural development still relies heavily on foreign universities for training and the CGIAR system for research. This will need equipping of agricultural faculties with modern laboratories, enhancing the capacity in the national agricultural institutes and looking at the incentives for scientists working in agriculture. A major innovation would be to integrate agricultural training within the life sciences departments. Graduates in the life sciences, as applied in agriculture, should then be accorded enhanced professional prestige similar to that accorded to engineering and medical sciences. This will have the effect of attracting some of the best and brightest minds into agricultural sciences, thus boosting the ranks of scientists dedicated to working in agricultural research. This transformation of traditional agricultural faculties may be hard to achieve given the institutional inertia in many university systems but will be in line with developments in the world where agricultural science is not a poor cousin to the other sciences but is part of high-end life science.<sup>7</sup>

There is also need for more training in economics of development and policy analysis to produce cohorts of well-qualified policy experts to improve the speed and quality of policy generation, implementation and evaluation. Efforts such as those being implemented by the AERC and the Collaborative Master's Program in Agricultural and Applied Economics in Eastern, Central and Southern Africa (CMAAE) for Master's and PhD training within Africa should be sustained and expanded.

<sup>7</sup> This kind of structure is found, for example, at Cornell University, where the college of agriculture is also the college of life sciences.

### 4.3.3 Policy co-ordination, openness and trade: the role of transnational institutions

There have been efforts in several regions to develop regional and sub-regional agreements on trade, political and economic cooperation using regional economic coordination institutions (RECs).<sup>8</sup> The chief goal of these RECs is to reduce intra-regional trade barriers via the formation of free-trade areas to eliminate tariffs, quotas and preferences on most goods traded among them. Through the RECs, it is possible to implement more coordinated trade policies such the elimination of unjustified non-tariff barriers, outlawing arbitrary export bans. Similarly, harmonisation of product standards and customs requirements across countries will increase intra-regional trade and stabilise food prices. Such cooperation, coordination and openness will foster trade flows and definitely help blunt the amplitudes of food price swings in regional markets.

Unfortunately, the food price crisis has led to an international situation which requires co-ordination and co-operation but many countries have resorted to unilateral initiatives whose overall outcome is worse for all countries involved. This mirrors what *von Braun et al. (2008)* refer to as the prisoners' dilemma in international food trade. Instead of cooperating and encouraging trade, countries are engaging in 'defect–defect' activities that undermine trade, lead to high international prices and discourage production. In the longer term, trade has the potential to be a valuable tool for coping with regional and national supply and price fluctuations, but its effectiveness has been reduced by the failure to implement fair and rule-based trade for agriculture through the Doha Round of negotiations. Ultimately, however, completion of the Doha Round is critical to creating a well-regulated system of trade, and the job for all the RECs therefore seems well cut out. Regional efforts to strengthen advocacy for a more equitable world trading system is one way of utilising the regional institutions. It is only through an open system of trade that countries will truly be able to cope with supply and price fluctuations either at national, regional or international markets. This requires that a fair and rule-based trade regime for agriculture be put in place.

<sup>8</sup> Examples include: the Common Market for East and Southern Africa (COMESA), the East African Community (EAC), Economic Community of Central African States (ECCAS), Economic Community of West African States (ECOWAS), Intergovernmental Authority for Development (IGAD) and the Southern Africa Development Community (SADC) and the continent-wide framework, the New Partnership for Africa's Development (NEPAD).

Another area where RECs and other regional initiatives can help in the enhancement of trade is developing market information and intelligence systems. 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 more value added if they included forecasts over longer time horizons and options for remedial actions.

Policy networks such as Association for Strengthening Agricultural Research in Eastern and Central Africa (ASARECA) and its ECAPAPA programme represent good examples of the kind of transnational initiatives needed in SSA. However, these regional multi-state arrangements face the great challenge of priority setting. It is difficult to come up with a few and manageable overarching agricultural research and development priorities relevant across the region. Who will set these priorities? Will those who provide more funds have a larger role and will these be external donors? How possible is it to develop sustainable funding mechanisms based on local resources? Can CAADP framework be used to leverage resources from national budgets for these initiatives? The sustainability of these efforts will require pooling of resources from member countries; with the advantage of economies of scale, they will be able to achieve more collectively. International development agencies such World Bank, IMF and bilateral institutions should commit to making available resources for all these activities on a priority basis.

Finally, as proposed by *von Braun et al.* (2009), there is critical need for global collective actions for modifying the architecture of international financial and agricultural markets to address the problem of price spikes, especially their effects on the livelihoods of the poor. They propose a three-pronged approach focusing, first, on developing a modest international physical food emergency reserve to help provide means for expeditious and smooth response to food emergencies. This reserve will be dedicated to emergency response and humanitarian assistance and would be managed by the WFP and located in major developing-country regions, with countries agreeing to make available storage facilities for these internationally mandated and important stocks.

The second action is to have a global food reserve system designed to reduce the risks of individual countries that are struggling to achieve grain self-sufficiency. Efforts aiming at self-sufficiency generally run the risk of producing a very inefficient global production system, excessive

reserves and a diminished global grain market. The third option is to establish a virtual food reserve to help prevent market price spikes and to keep prices closer to levels suggested by long-run market fundamentals, like supply and demand, without putting at risk the coordinated global reserves.

#### **4.3.4 Public/private partnerships**

Since the role of improved technology, international trade and market-based economies in modernising agriculture is not debatable, other areas that may require attention will be the precise role of government in laying the foundations for market-driven sectors and specifically creating an enabling environment for the private sector. The private sector along the whole food-value chain has a key role to play in stabilising food prices and in the recovery from the crisis by offering technological advances for improving agricultural productivity, providing infrastructure and innovating in the spheres of agricultural insurance and small farm credit. A traditional approach to coping with the failures revealed by the food price crisis would involve building up physical, public, globally managed grain reserves. These reserves should be built using market channels. For example, the National Cereals and Produce Board in Kenya can play an important social function akin to that of the Central Bank in money markets. Such a framework can be used in national and supranational initiatives. Since many governments do not have adequate facilities required to hold grain stocks, the private sector should be brought on board and given incentives to enable them to play the complementary role such as participating in the concept of warehouse receipt system.

Although public–private sector partnerships offer viable opportunities for agriculture and food production, there still are a number of uncharted areas: What innovative public–private financing mechanisms can be used to finance investment in high impact priority areas in agriculture? What sort of insurance arrangements can best serve the agricultural sector? Are there technologies that can help African agriculture leapfrog from its current situation to one based on cutting-edge science?

#### **4.3.5 Monitoring and assessment of food security programmes**

Monitoring and evaluation (M&E) of development activities provides government officials, development managers and civil society with better means for learning from past experience, improving service delivery,

planning and allocating resources and demonstrating results as part of accountability to key stakeholders. Within the development community, there is a strong focus on *results*: this helps explain the growing interest in M&E and the critical role that can be played by regional institutions especially in monitoring the implementation and evaluating the results of all food security programmes.

Decision-makers who serve leaders of national governments need information and analytical tools to assess the risks and opportunities their countries face from current and future global food crises, to determine how they might respond to those risks and opportunities and to monitor both the impact of a food crisis and the effects of governments' policy responses. Although the implications of a global food crisis differ across countries and population groups, there are relatively well-defined sets of information and analyses that governments can employ to manage such crises in their respective countries. Consequently, economies of scale can be captured at the international level through joint action to collect data on food crises and their effects, to build analytical capacity and to evaluate the effectiveness of policy responses. Similarly, there are a relatively small number of types of policy responses that governments might take in the face of these crises. Here, too, there is scope for international action: the lessons learnt from both effective and failed policy responses by national leaders can be shared to aid other countries considering similar policies.

## 5. Conclusions

We have reviewed the economic background against which the recent food crisis was set. It is evident that the mid-2000s was a decade of heartening progress in the growth of African economies, largely driven by the commodity boom during this period. Not to be overlooked is the fact that many countries have implemented reforms which laid the basis for the expansion of the private sector and increased economic activity. If these trends were to continue, Africa, and SSA, in particular, may as well enter a sustainable high growth trajectory. How African economies will fare at the end of the decade and beyond remains to be seen. There are worrying signs that the commodity boom may be coming to an end amidst a global recession and financial crisis.

It was clear from our review that the agricultural sectors in the region do not show outcomes commensurate with the observed economic growth in the economies of SSA. Key indicators such as consumption and

productivity of major commodities have stagnated, sometimes falling below the 1970s levels, and most importantly lagging behind those of other developing regions of the world. The overall story for much of African agriculture has been that of stagnation for the 20–30 years based on calorie consumption patterns, dietary diversification and productivity growth.

The agricultural sector is often said to be the driver of economic growth and industrialisation and, for predominantly agrarian economies, the sector is of strategic importance for the fight against poverty. The situation in Africa, however, poses a lot of practical and ideological challenges: there is wide diversity, for example, with respect to the role of agriculture in the economy as well as in resource endowments and rarely will one best practice fit all the countries. Despite the traditional significance of agriculture, no country wants to get stuck in the production of high-volume low-value commodities. The goals of many countries, even those in Africa, thus invariably stipulate a long-term exit strategy towards industrialisation. But industrialisation and global competitiveness can only be nurtured on cheap food. A long-term upward surge in food prices must therefore be seen in the light of Africa's underlying quest for industrialisation or a shift away from over-reliance on low-valued agricultural commodities whose global trade is usually riddled with controversy.

While some of the recent increase in food prices can be traced to policies like the promotion of biofuels, part of the increase is due to higher input costs, exacerbated by poor infrastructure, and the need for more supply. Low food prices and flawed agricultural policies have themselves been part of the problem in the past but there is likelihood that the recent crisis was just a hint that high prices may persist, especially in SSA where inelastic supply is exacerbated by market imperfections and poor commodity distribution networks. It is hoped, however, that high food prices will create a sense of urgency with regard to increased investment in agriculture, changes in agricultural commodity trade policies and product diversification as a means of tackling price volatility.

The global agricultural imbalances are a serious problem for the poor in SSA due to their inability to respond to market opportunities and vulnerability to disasters that disrupt food production and distribution. The best way of going forward is to have emergency and disaster preparedness and committing adequate resources for this while exploiting the RECs and international goodwill. Long-term programmes for sustainable development should continue focusing on productivity growth through the

application of science and human capacity building as well as on investments in the physical and marketing infrastructure.

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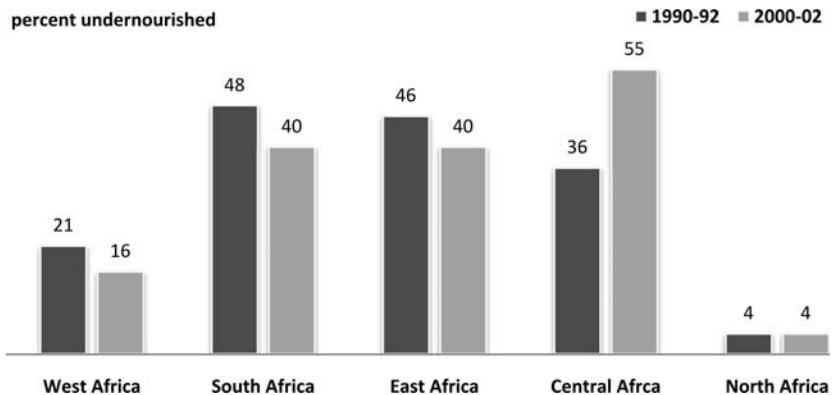
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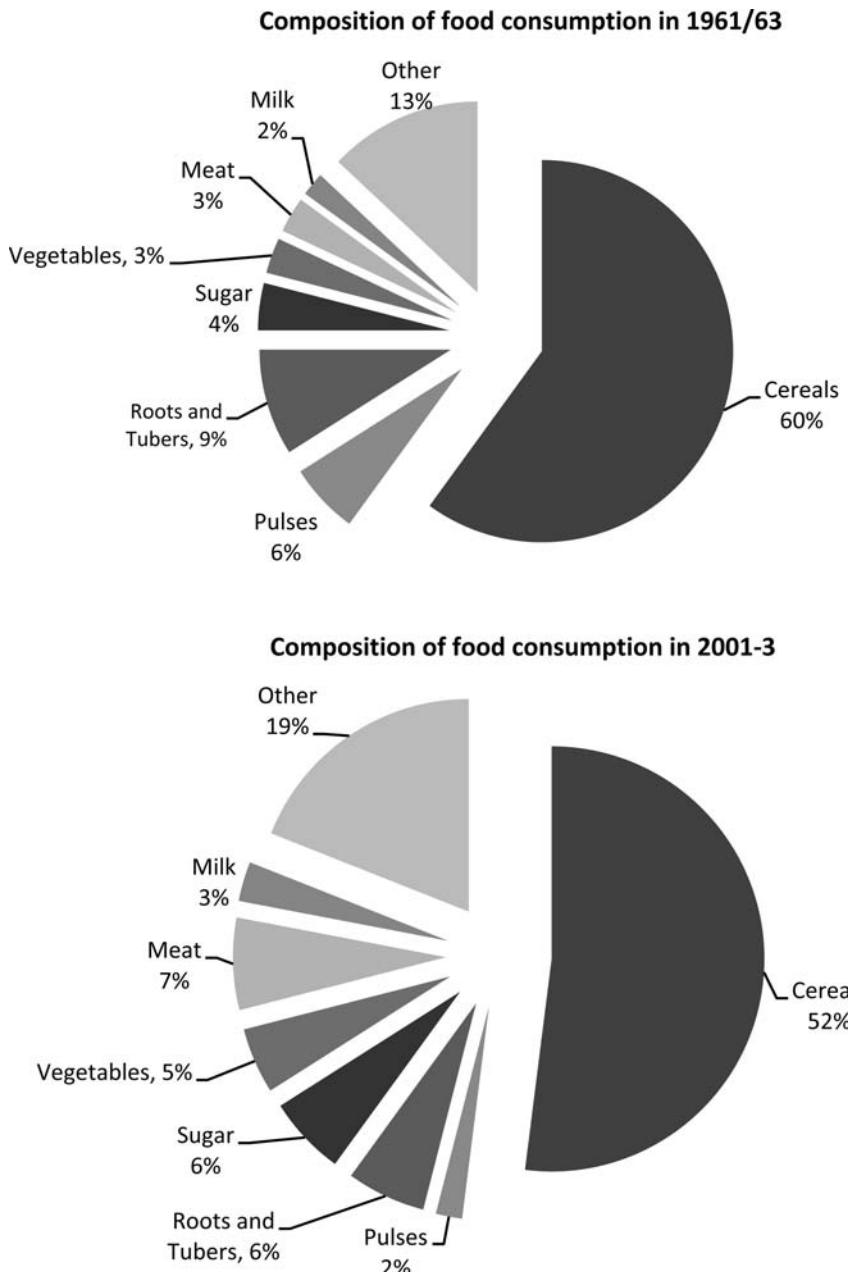
## Appendix

**Figure A1:** Malnutrition Rates in Africa between 1990/92 and 2000/02



**Table A1:** Consumption Trends for Specific Food Items (Fats, Meats, Fish and Vegetables)

Region	Supply of fat (g per capita per day)					Change between 1967– 69 and 1997–99
	1967–69	1977–79	1987–89	1997–99		
World	53	57	67	73	20	
North Africa	44	58	65	64	20	
SSA	41	43	41	45	4	
Per capita consumption of livestock products						
Meat (kg per year)						
1964–66	1997–99	2030	1964–66	1997–99	2030	
World	24.2	36.4	45.3	73.9	78.1	89.5
Developing countries	10.2	25.5	36.7	28.0	44.6	65.8
Near East and North Africa	11.9	21.2	35.0	68.6	72.3	89.9
SSA	9.9	9.4	13.4	28.5	29.1	33.8
Supply of vegetables per capita, by region, 1979 and 2000						
(kg per capita per year)						
1979		2000				
World	66.1	101.9				
Developed countries	107.4	112.8				
Developing countries	51.1	98.8				
Africa	45.4	52.1				

**Figure A2:** Diet Diversification in Developing Countries (Source: FAO, 2007)

**Table A2:** High Food Prices: Policy Measures by Country (Sources: ASARECA, 2008 and FAO-GIEWS, 2008)

	Consumer oriented					Producer oriented		Trade oriented		
	Tax	Social		Market		Production support	Market management	Import	Export	
		Food assistance	Food subsidies	Safety net and other	Price controls					
Algeria										
Angola										
Benin										
Burkina Faso	✓	✓			✓		✓		✓	
Cameroon						✓			✓	
Cape Verde		✓			✓				✓	
Central African Republic								✓		
Congo	✓									
Democratic Republic of the Congo								✓		
Djibouti	✓				✓					
Egypt		✓	✓	✓	✓				✓	
Eritrea			✓							
Ethiopia	✓		✓			✓			✓	
Gambia	✓							✓		
Ghana								✓		
Guinea								✓	✓	

	Consumer oriented					Producer oriented		Trade oriented		
	Tax	Social		Market		Product ion support	Market managem ent	Imp ort	Export	
		Food assistance	Food subsidies	Safety net and other	Price controls	Release stocks	Food procurement and other	Producer credit, input subsidies and other	Minimum producer prices and other	Import tariffs and other
Kenya	✓									
Liberia		✓								
Libyan Arab Jamahiri										

ya											
Madagascar		✓								✓	
Malawi							✓	✓		✓	
Mauritania						✓	✓		✓		
Morocco		✓	✓						✓		
Mozambique									✓		
Namibia	✓										
Niger						✓	✓		✓		
Nigeria		✓				✓	✓	✓	✓	✓	
Rwanda				✓		✓			✓		
Senegal	✓	✓	✓		✓	✓	✓	✓	✓	✓	
Seychelles							✓				
Sierra Leone									✓		
South Africa		✓									
Sudan	✓				✓	✓					

	Consumer oriented					Producer oriented			Trade oriented			
	Tax	Social		Market		Production support	Market management	Import	Export			
	Taxes (direct and indirect)	Food assistance	Food subsidies	Safety net and other	Price controls	Release stocks	Food procurement and other	Producer credit and other	Minimum producer prices and other	Import tariffs and other	Quantitative export controls	Export price control and tax measures
Togo					✓							
Tunisia							✓	✓				
Uganda	✓											
United Republic of Tanzania	✓		✓		✓		✓			✓	✓	
Zambia			✓		✓		✓	✓	✓		✓	
Zimbabwe		✓								✓		
Total	11	10	8	2	9	4	9	18	7	23	8	0