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# The Food Price Spikes of 2008/09 and 2010/11: Impacts and Policies in African Countries

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**Abstract:** This paper explores the varied impacts during the two spikes in food prices in 2007/08 and 2010/11 and the differences in the policy responses among African countries. It first links changes in international food prices, the impact on domestic prices, and the range of responses available to national policy makers. Policy responses by African governments to food price increases are then surveyed and characterized according to their macro, micro or structural focus, and the country-specific circumstances. The paper also discusses the impact of rising food prices on household welfare and underscores the importance of timely and effective mitigating policies.

**Key words:** Food price increases, impacts, policies, welfare, Africa

**JEL classification:** O12, I30, Q02

## 1. Introduction

International food prices have spiked markedly twice in the past few years. In the year to June 2008 they surged 36 percent in real terms after two decades of relative stability. After receding, prices rose again in mid-2010. In the year to June 2011 the Food and Agricultural Organization (FAO) global food price index increased by 43 percent in real terms. It stabilized in the second half of 2011 but at a level about 10 percent higher than its high in 2008.<sup>1</sup> Rising food prices are particularly challenging for Sub-Saharan Africa, the region with the highest share of poor and hungry people in the world.

Numerous factors have contributed to the recent spikes in food prices and their heightened volatility. On the supply side, besides weather tightened stocks in cereal markets after decades of demand growth outpacing gains in yields have played a role.<sup>2</sup> Thinner stocks necessitate adjustments to supply interruptions through prices. Even small disruptions in supply can then generate large price swings, and the effects are compounded when multiple disruptions occur simultaneously. The persistently low agricultural productivity is rooted in under-investments in agricultural infrastructure, market failures, ineffective government policies and inadequate R&D. Increased demand for food is due to population growth, shifting tastes in emerging and frontier markets, the rise of the bio-fuel industry and Chinese demand for soybeans (Abbott et. al, 2011; Heady and Fan, 2010; Benson et al, 2008).

This paper explores the varied causes and impacts of the two food price spikes in Sub-Saharan Africa (Africa from now on) and the differences in the policy responses at the country level. While food markets in 2010/11 have been affected by the confluence of many of the same factors that were at play in 2007/08,<sup>3</sup> there were also key differences in both causes/transmission channels, impacts and policy responses. Some of the same factors (e.g., exchange rates, weather) have played out differently in 2010/11 than in 2007/08. Understanding such differences is key for designing appropriate policy responses and mitigating mechanisms against future food price or other macroeconomic shocks.

The analysis revealed four notable differences between the two episodes in terms of transmission channels, impacts and policies. Firstly, the number and type of food commodities exhibiting rapid increases and heightened volatility has differed. Secondly, the pass-through of global prices onto national African markets was much stronger in 2007/08 than in 2010/11. Thirdly, policy responses have tended to be more subdued in 2009/10 than in 2007/08 as the fiscal space available to governments was reduced in the aftermath of the global financial crisis. Fourthly, the overall welfare loss at the household level has seemed to be more limited in 2010/11 than in 2007/08.

The paper is organized as follows. Section 2 outlines the conceptual framework. Section 3 examines the impacts in more detail using a market data for a range of food groups and countries, and country-level data on consumer prices. Section 4 surveys the policy responses by African governments to food price increases in the two periods, with a focus on the differences in responses according to their macro, micro or structural focus, and the country-specific circumstances. The final section concludes.

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<sup>1</sup> The recent food price spikes are not without precedents over a longer period; food prices were even higher in early 1970s than in late 2000s. The food crisis of 1972/73 stemmed from a severe weather shock to global grain production, which was amplified by financial turmoil and US policies (Timmer, 2010).

<sup>2</sup> According to FAO (2011), cereal stocks have fallen by more than one-third since 2000.

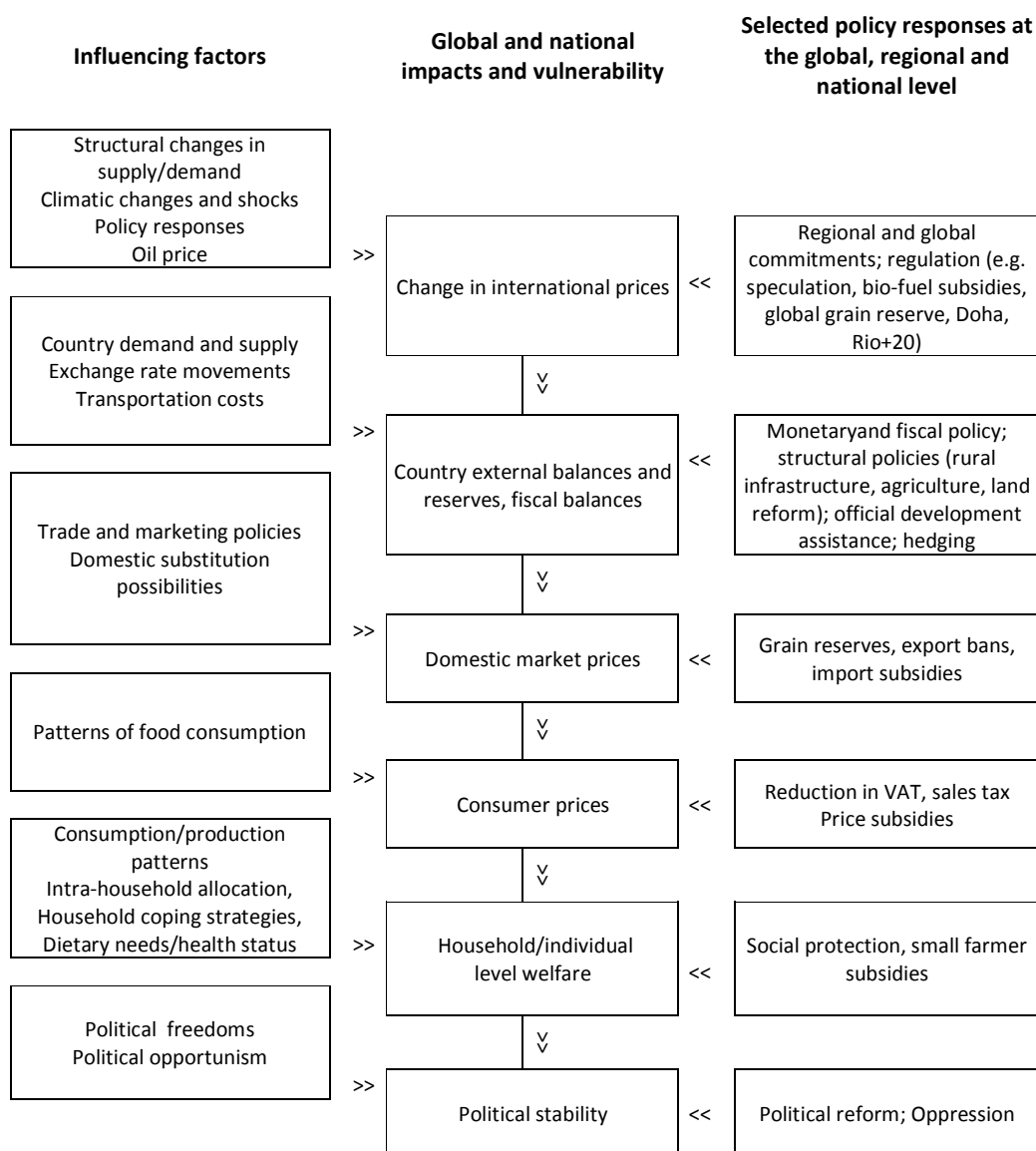
<sup>3</sup> These included adverse weather and poor harvests affecting some of the main exporters, dollar depreciation, rising oil prices and short-sighted policy responses. The role of the 'financialization' of commodity markets and speculation remains debated (Heady and Fan, 2010; Minot, 2011).

## 2. Conceptual framework

The relationship between international and domestic food prices and the wider economic, social and political implications is distinctly country-specific. Figure 1 presents a conceptual framework that reflects the multiple influencing factors and the country-specific *manifestations* of the transmission of

global food prices to individual countries and households. Five areas of domestic *impacts and vulnerability* to food price rises are identified: impact on external balances and reserves, domestic market prices, consumer prices, the welfare at household level, and possible political instability.<sup>4</sup>

**Figure 1:** Conceptual framework: factors, impacts and policy responses to rising food prices



**Source:** Authors' construction based on Heady and Fan (2010) and Benson et al (2008).

<sup>4</sup> A positive long-term correlation between international food price and the incidence of anti-government protests, riots and civil conflict in low-income countries has been established (Arezki and Bruckner, 2011 and others). We leave this important topic to further research.

Changes in global food prices directly affect a country's balance of payments through the trade balance, which is impacted by influencing factors related to terms of trade (degree of openness, structure of commodity trade and import dependence, and exchange rate regime and movements). These effects may be mitigated by official development assistance or other concessional financing from the international community. Accordingly, in 2007/08 multilateral development banks expanded the range of instruments to support countries to cope with the pressures on their external and budget balances. Development partners made new pledges to support agricultural development. In addition, policies at the regional level such as release of grains, intra-regional trade and/or coordinated monetary policies (e.g., EAC) can help counter the food price shocks.

In turn, domestic market prices will be affected by factors beyond the terms of trade effects and global and regional policies. Examples include transportation costs to and from ports of entry, as well as trade, fiscal and marketing policies (e.g., ban of trade, price subsidies) and domestic substitution. The change in food inflation will depend on the composition of private consumption, which varies between and within countries. The extent to which changes in global food prices reach households is also influenced by the household's reliance on markets and own agricultural production, intra-household allocations of resources, dietary needs and health status, as well as informal and formal social protection mechanisms in place (Figure 2).

### **3. Country-level impacts and vulnerability to food price increases**

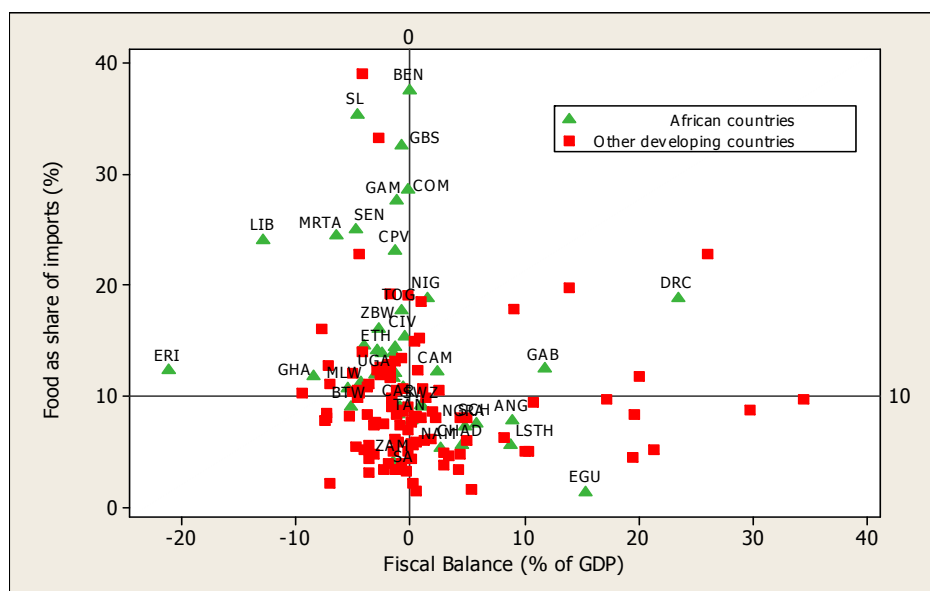
Drawing on the national and international data sources, this section examines the evidence on the domestic impacts of global price shocks in selected African countries, underscoring the role of country-specific economic and socio-political conditions.

#### **3.1 Macroeconomic vulnerability of African countries to rising global food prices**

Spikes in global food prices have macroeconomic implications for African countries due to increased import bill/deteriorating trade balance, inflationary pressures and in cases where food is subsidized (e.g., Mozambique) also on fiscal balance. Key factors for identifying countries' macroeconomic vulnerability to global food price shocks are (i) the country's dependence on food imports; (ii) fiscal space to cushion the shock; (iii) income as indicator of the country's ability to mobilize resources for food in the case of crisis.

Focusing on food import dependence and the fiscal space (Table 2) indicates that Liberia, Sierra Leone, Mauritania, Senegal were some of the countries that were most vulnerable to price increases. Their vulnerability stemmed from the high food import dependency and limited policy space to counter shocks. Some of the least vulnerable countries are either oil exporters (e.g. Equatorial Guinea and Angola) or middle income countries (MICs) in Southern Africa (e.g., Namibia and South Africa), who are less dependent on food imports and have greater policy space (and income). While share of food in household expenditures in MICs is lower than in low-income countries, even MICs that are net food exporters (e.g., South Africa) can face local food security challenges due to income inequalities and rigidities in food markets.

**Figure 2.** Macro level vulnerability of African countries, 2008



**Source:** Authors' calculations based on FAO and IMF WEO databases.

### 3.2 Price pass-through from global to African markets

International food prices (in USD terms) have been volatile, but it is domestic prices (in local currency) that directly affect food consumption and production of households. With efficient markets, identical goods will have the same price, as price difference between them will be closed through arbitrage. In reality, however, goods are not identical and markets are imperfect. Empirical analysis suggests that over the long term the pass-through of changes in international food prices to local markets in Africa is limited.<sup>5</sup>

Changes in international food prices may not pass through, or do so with delay, to African food markets for a number of reasons. Local food prices are shaped by domestic supply shocks, such as high transportation costs especially among the many land-locked countries on the continent and among those with inadequate infrastructure. Policy barriers such as export bans or restricted access to foreign exchange also disrupt price transmissions. Concentration of market power and asymmetrical information among traders can further prevent arbitrage and the transmission of price changes. To examine differences in price transmission between the two rice spikes, Table 1 extends the analysis of Minot (2011) for more African countries and markets, and updates it with data for 2010/11. It reports changes in international and domestic prices in 119 African commodity markets in 14 countries for which price information was available covering the two periods of price increases

<sup>5</sup> For example, examining price transmissions in 8 developing countries from 1970 till the 1990s, Baffes and Gardner (2003) found that only three were integrated into world markets to a significant degree. The pass through was also very limited in the three African countries in the sample (Egypt, Ghana and Madagascar). A study by Minot (2011) of 62 commodity markets in 9 African countries found a statistical significant relationship between international and local prices in only six markets over a 5-10 year period.

and for USD values and local currency units (LCU) in both nominal and real terms. It also reports results for the intermediate period from June 2008 to February 2010.

**Table 1: Pass-through of food price increases in 2007/08 and 2010/11**

	Cassava	Maize	Millet	Rice	Sorghum	Wheat
	Change in international price in USD*					
June 2007 - June 2008	86%	71%	86%	162%	65%	25%
June 2008 - February 2010	-33%	-42%	-33%	-34%	-39%	-23%
February 2010 - February 2011	49%	77%	49%	-4%	69%	75%
	Change in domestic price in USD					
June 2007 - June 2008	41%	104%	46%	56%	70%	52%
June 2008 - February 2010	-1%	-8%	-16%	-8%	-18%	-15%
February 2010 - February 2011	-3%	3%	-8%	6%	-4%	8%
	Change in domestic price in nominal LCU					
June 2007 - June 2008	34%	89%	27%	38%	49%	38%
June 2008 - February 2010	17%	8%	-5%	8%	-6%	-4%
February 2010 - February 2011	-2%	5%	-7%	8%	-3%	7%
	Change in domestic price in real LCU					
June 2007 - June 2008	22%	74%	18%	27%	36%	26%
June 2008 - February 2010	8%	-3%	-7%	3%	-9%	-10%
February 2010 - February 2011	-8%	-4%	-9%	2%	-6%	2%
	Change in domestic price in real LCU as a share of change in international price in real USD*					
June 2007 - June 2008	28%	116%	23%	17%	62%	144%
June 2008 - February 2010	-22%	7%	19%	-8%	21%	38%
February 2010 - February 2011	-21%	-6%	-23%	-14%	-10%	3%
Number of markets (N=119)	13	32	22	44	7	7
No countries (N=14)	6	9	4	11	4	4

**Source:** Own calculations based on price data from FAO and US Bureau of Labor Statistics. FAO data on international commodity prices: <http://www.fao.org/es/esc/prices/PricesServlet.jsp?lang=en> and on domestic market prices: <http://www.fao.org/giews/pricetool2/>. Note: \*International prices for Cassava and Millet use averages for maize, rice and wheat. International prices are Wheat (US No2, Soft Red Winter Wheat, US Gulf), Maize (US No, Yellow, US Gulf) and Rice (White Rice, Thai 100% B second grade).

The food price spikes of 2007/08 and 2010/11 display differences when it comes to pass through from the global to local markets. Specifically, the global food price spike was transmitted more directly to African markets in 2007/08 than in 2010/11. In 2007/08 the domestic price (in USD) increased more than the international price for maize, sorghum and wheat; pass through was large for rice, cassava, and millet as well. These commodities are less traded internationally and their prices were thus affected indirectly as consumers substituted them for more expensive traded commodities. In 2010/11 the pass-through to local markets was more limited. Despite steep increases in the international prices for maize and wheat, changes in domestic prices (in USD) were small (3 and 8 percent, respectively). Domestic prices for cassava, millet and sorghum actually fell during the period.

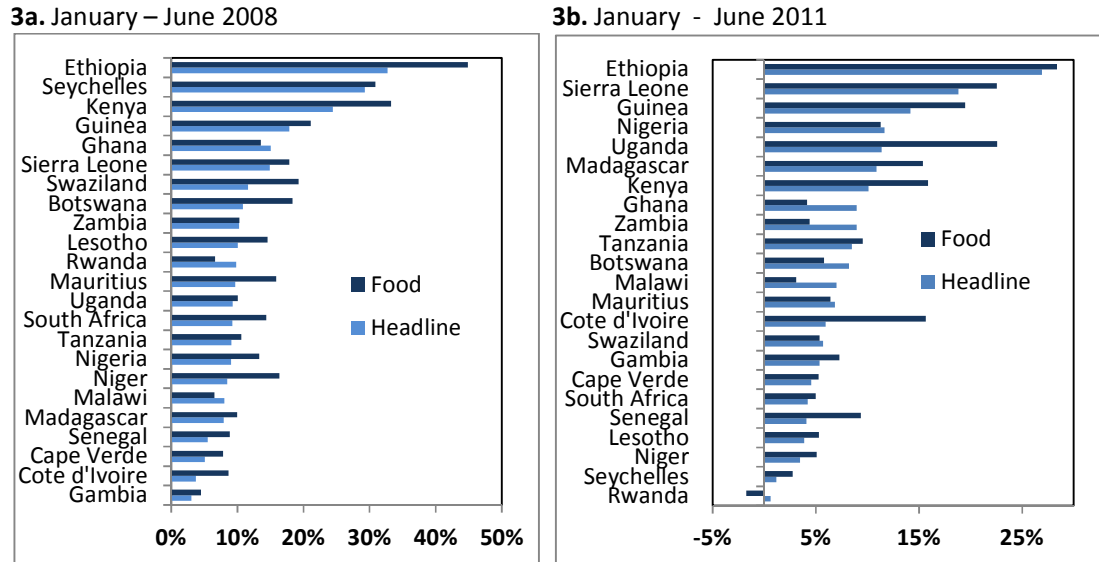
Minot (2011) suggests that the pass through in 2007/08 was particularly strong because of the extraordinary large size of the price shock, which was accompanied by sharply higher transportation costs due to oil price increases. Adverse policy responses, including export taxes or bans on grains

which were used less in 2010/11, exacerbated the impact on prices in neighboring countries. Aker et al (2011) take the limited success of West African governments to contain the pass-through of international rice prices in 2007/08 as evidence of these countries' growing dependence on Asia to meet a rapidly growing domestic demand for rice. Nearly 40 percent of the rice consumed in Africa is imported, which represents about one third of all rice traded in world markets (Seck et al, 2010). Finally, exchange rate movements will affect the degree to which a change in USD-denominated domestic prices is passed through to local consumers. For all the commodities reported in Table 2, the LCU denominated changes were smaller than the change in USD denominated domestic prices, which suggests that currency adjustments (appreciation) buffered at least some of the effects from rising USD-denominated prices. For example, during the 2007/08 price spike the LCU denominated change in rice price was only 32 percent even though the USD denominated price rose by 54 percent, reflecting the appreciation of the CFA against the USD among the rice importers in West Africa.

### 3.3 Impact of rising food prices on inflation in selected African countries

This section examines the extent to which rising food prices have translated into acceleration in consumer prices during the two episodes, utilizing data from national statistics offices in 23 African countries. Given the large share of food in CPI (typically weighing 40 percent but be up to 58 percent as in Malawi) and weakly anchored inflationary expectations, food price inflation has been a critical determinant of overall consumer price inflation in most African countries. Nevertheless, the impact of food inflation on the overall inflation varied between the two price spikes. While in 2007/08 in all but 3 out of 23 countries examined food inflation exceeded headline inflation, in 2010/11 food price inflation was actually tempering overall price changes in one third of countries.

**Figure 3:** Average rates of headline and food price inflation (January-June 2008 and 2011)



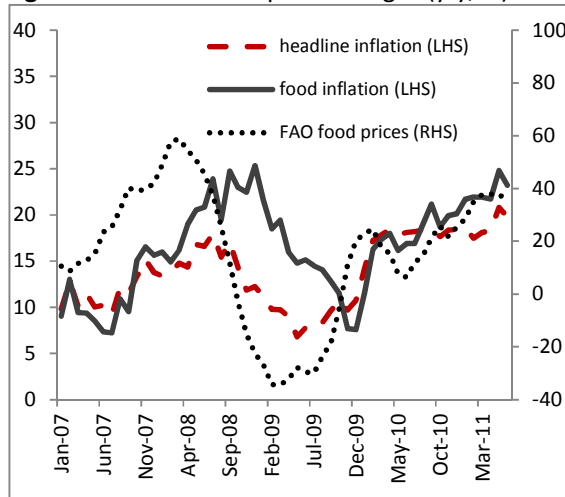
**Source:** Authors' calculations based on price data from national statistics offices.

The drivers of food price inflation vary and go beyond the impact of international food prices. In countries such as Sierra Leone (4a) where the main staples are imported, global price effects are more direct than in countries such as Malawi where staples are supplied by local farmers (4b). This does not mean that there are no price volatility and spikes in countries where local conditions are the key determinants of prices. For example, the on-going severe drought in the Horn of Africa is leading to price increases for cereals of at least 30 percent in the most affected areas of Kenya (4c).

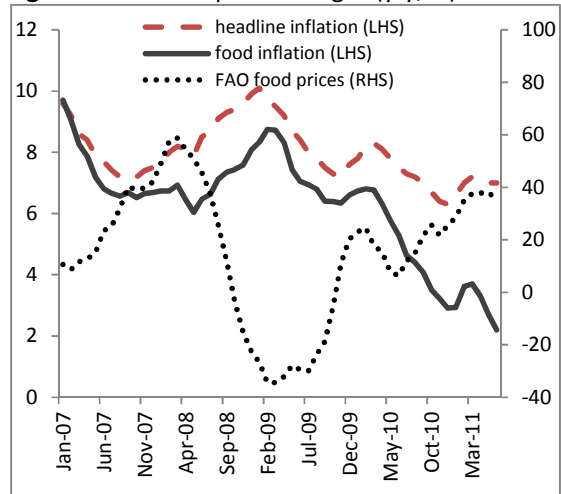


In mid-2011, corn prices in Kenya fell by about 20 percent due to (import tariff-free) shipments from Zambia and Malawi and good harvests in the parts of the Rift Valley. At the same time, some of the harvests remain unutilized as the farmers lack access to storage facilities and markets. In Southern Africa good maize harvests have kept food prices low; in many of these countries (e.g., South Africa, Swaziland) food inflation is close to or even below the overall inflation (Figure 4d).

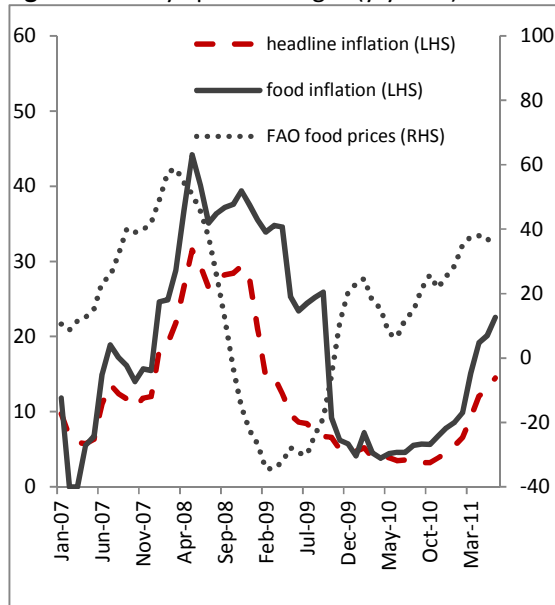
**Figure 4a: Sierra Leone price changes (y-y, %)**



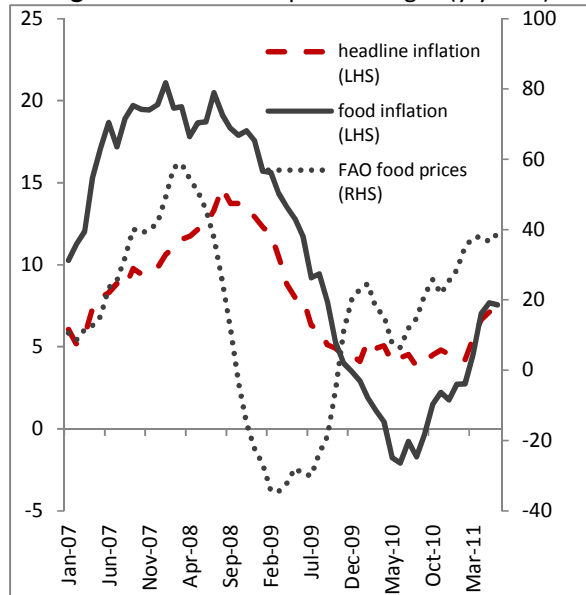
**Figure 4b: Malawi price changes (y-y, %)**



**Figure 4c: Kenya price changes (y-y in %)**



**Figure 4d: Swaziland price changes (y-y in %)**

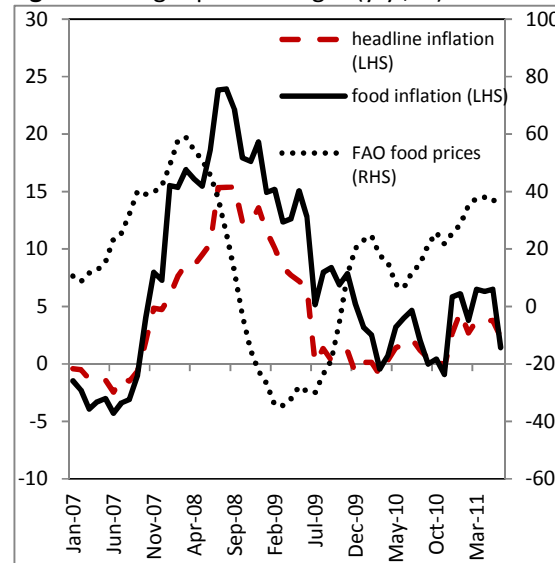


Source: National Statistical Offices.

Other country-specific factors have also played a role. In the Sahel region and notably in Niger in 2010 (Figure 4e), the timely and coordinated international food aid helped limit the pass through and keep inflation under control. Weather events have pushed up prices in some countries (e.g. floods in Benin and drought in Kenya), as noted, whereas political instability has played a role in others e.g. Cote d'Ivoire (Figure 4f). Moreover, while most countries are affected by the higher costs of fertiliser due to increases in energy prices, landlocked countries—of which Africa has more than

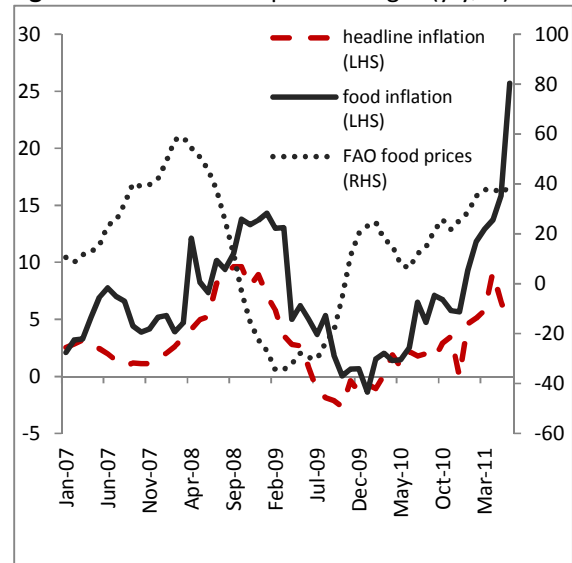
any other region—are typically affected disproportionately as they experience higher cost of transport to markets as well. Net-fuel and food importing countries (e.g. Lesotho and Seychelles) have been particularly vulnerable to rising global commodity prices, and face tightening balance of payments constraints.

**Figure 4e: Niger price changes (y-y, %)**



Source: Institut National de la Statistique du Niger.

**Figure 4f: Cote d'Ivoire price changes (y-y, %)**



Source: Institut National de la Statistique du Côte d'Ivoire.

#### 4. Domestic Policy Responses<sup>6</sup>

African governments have adopted a wide range of measures to counter rising food prices, aimed at ensuring adequate supply of food at affordable prices for their people. To assess the range of policy responses applied by governments and to discern policy changes between 2007/08 and 2010/11, this section presents results from a UNDP Regional Bureau for Africa survey conducted among the UNDP offices and national governments in 33 African countries. Summary results are in Figures 5a and 5b.

The policy responses can be classified into three main groups: (i) market (economy-wide) measures impacting prices at the macro level; (ii) social and economic policies directed at households; and (iii) structural reforms to remove long-term production/structural bottlenecks. Regarding timing of their impact, measures can be categorized as (i) short-term (economy-wide measures and social protection schemes typically fall to this category) and medium-term (measures raising agricultural output). Economy-wide measures surveyed were cuts in import tariffs, use of strategic reserves, export ban or restrictions, price controls, reduced VAT or sales tax rates. Social measures included fuel subsidies, cash transfers, transport vouchers, food for work programmes, food distribution and subsidized food basket. Finally, medium term structural measures surveyed were changes in lease arrangement, increased investment in rural infrastructure, and increased budget allocation to agriculture.

Most countries surveyed (31/33) intervened to contain food price surges in both (2007/08 and 2010/11) episodes.<sup>7</sup> Some measures were mostly a reinforcement of existing practices and thus

<sup>6</sup> In addition to government policies, households and firms also adopted various coping mechanisms to deal with the food price increases. Their coverage is beyond the scope of this paper.

driven by established policy frameworks (e.g., national food policy). Several countries used the food crisis as an opportunity to innovate and/or progress with politically sensitive structural reforms (land reform).

Cuts of import tariffs on food (and food aid distribution) were the most common short term policy in 2007/08, adopted in three fifths of the countries surveyed. They were followed by price controls, which were used in more than half (55 percent) of the countries. In 2010/11, social rather than market, economy-wide measures were more prevalent: food aid distribution became the most common policy response against rising food prices, utilized in three fifths of the countries. Among the economy-wide market interventions, with the marked decline in use of tariff cuts to only 1/3 of countries, direct price controls became the most frequent policy tool, utilized in half of the countries (Figures 5a and 5b).<sup>8</sup> Among medium-term measures structural measures to boost agricultural production, the governments increased budget allocations in two third of the countries in 2007/08, when fiscal space allowed it (Figure 5c). During both price spikes, investment in infrastructure was widely utilized (by more than half of the countries surveyed), and in 2010/11 it became the main medium term response.

The shift from fiscally intensive measures such as cuts in import tariffs, VAT rates, or budgetary allocations to measures with less direct budgetary impact (e.g., price controls, rural infrastructure) in part reflects the changed fiscal situation in a number of African countries (Figure 7). Due to past prudent macroeconomic policies many countries met the first food price increase with adequate fiscal space. By 2010/11, however, their fiscal positions deteriorated as a result of the triple crises (food, fuel and financial) and active fiscal policies adopted to offset them. With uncertain global recovery, even countries with some fiscal space adopted more cautious fiscal stance during the 2010/11 episode.

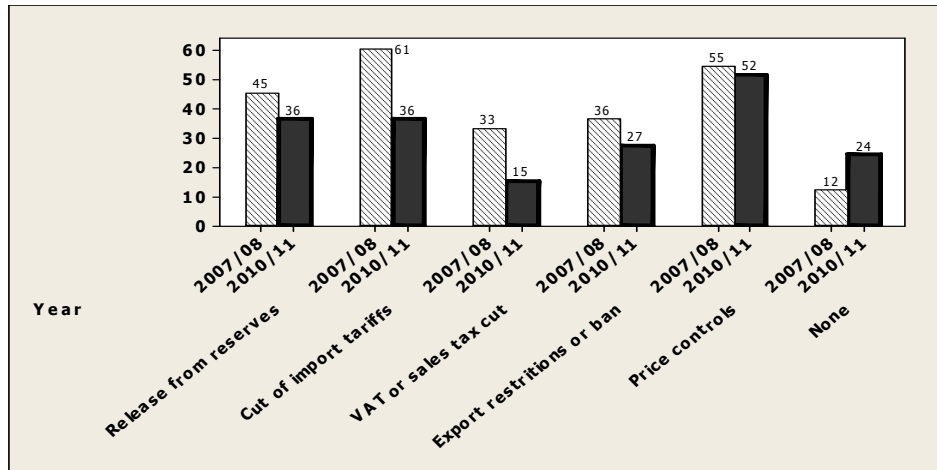
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<sup>7</sup> Given the longer term nature of structural measures, it is difficult to distinguish whether they were implemented to boost recovery after the GFC or to raise short-term production to mitigate price increases. For example, Nigeria has not reported any specific measures in 2010/2011 to address food price spikes, but the government raised credit to agriculture, as a part of recovery and diversification strategy.

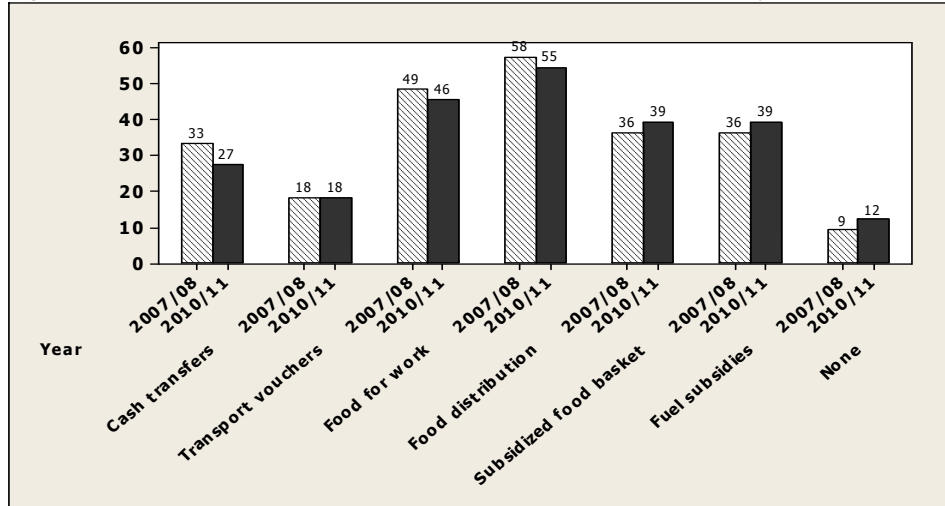
<sup>8</sup> If cuts in import tariffs and VAT/sales taxes were put into category of 'cuts in indirect taxes' then this policy response would be most common in 2007/08 (applied in 60 percent of the countries). As Wodon and Zaman (2010) pointed out, the focus on tax cuts as the main policy response in Africa contrasted with policies adopted in developing countries elsewhere, where price controls or consumer subsidies were most prevalent.

**Figure 5.** Policy responses in response to food spikes, by type and year

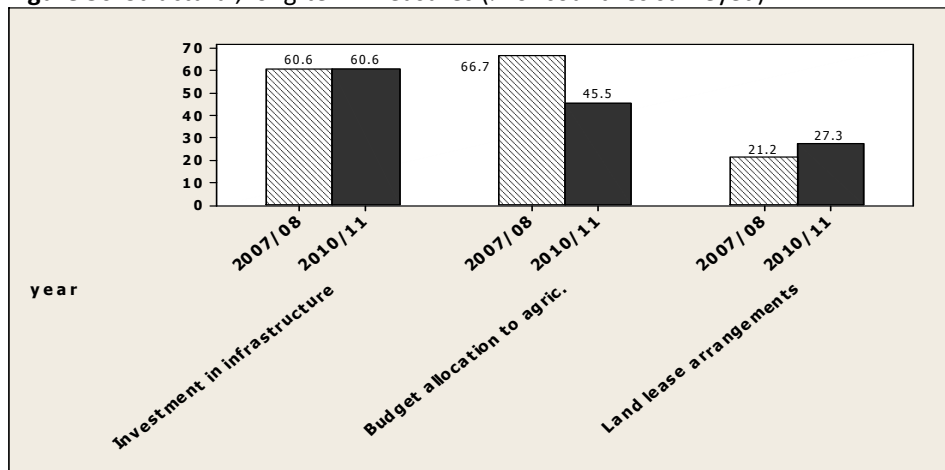
**Figure 5a.** Economy-wide (macro) measures (% of surveyed countries)



**Figure 5b.** Direct social, short-term measures (% of countries surveyed)



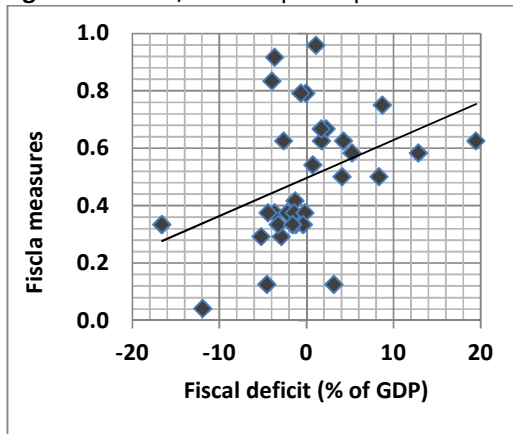
**Figure 5c.** Structural, long-term measures (% of countries surveyed)



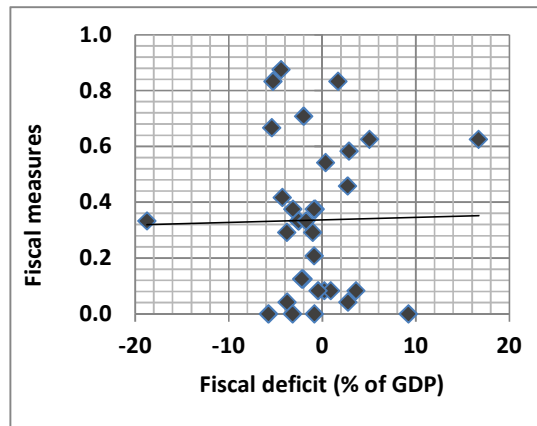
**Source:** Authors' calculations based on the survey of government policies in response to food price spikes in 33 African countries.

**Figure 6.** Fiscal space and fiscal measures to counter food price spikes in Africa1/

**Figure 6a.** 2007/08 food price spike



**Figure 6b.** 2010/11 Food price spike



**Source:** Authors' calculations based on the UNDP survey and IMF WEO data. 1/ The fiscal deficit for 2007/08 price increase is average of deficits during 2004-06 and for 2010/11 it is the average of deficits during 2007-09. Measures include budgetary allocations to agriculture, cuts in import tariffs and VAT rates, and subsidies which are weighted equally to derive index ranging from 0 to 1.

#### 4.1 Macro, market-level policy responses

*Releases from strategic grain reserves* have remained a relatively widely used policy response aimed at increasing food supply. Specifically, about 1/3 of countries has applied them during at least one of the food price spikes. In the past, all African governments held such reserves, but more recently reserves were viewed as costly and less needed with globalization. Over time most African countries have thus reduced their grain reserve stocks. While the recent food price increases and volatility have highlighted importance of some strategic grain reserves in Africa, debate continues on the optimal size of the stock and whether these should be held at national or regional level.

With declining strategic grain reserves, attention of policy makers has been shifting to trade, and in particular to *reducing import tariffs*, as a way to ensure adequate food supply in line with policy recommendations by IFIs.<sup>9</sup> However, often tariffs are not the key barrier to trade in Africa where substantial non-tariff trade barriers exist, as evidenced also by low intra-African trade. Longer term food security measures should thus include reducing trade costs by improving the business environment and facilitating regional integration.

*Price controls* were used in 2007/08 food price spike by almost half of the countries surveyed and became the most applied macro measure in 2010/11. The Ethiopian government has sought to avoid the extreme price increases of 2008, when food price inflation peaked at over 90 percent.<sup>10</sup> Hence after a 17 percent devaluation of the Ethiopian birr late in 2010, designed to boost exports, the government fixed prices for 18 basic food and non-food items (later relaxed to only 3 items). Moreover, a ban on maize exports was reintroduced. This measure has been only partially successful though -- inflation continues to accelerate possibly due to shortages and stockpiling in food markets.

<sup>9</sup> Tariff cuts were not used in Botswana, Namibia and Swaziland, who are members of the SACU.

<sup>10</sup> Price increases at the time appear to have been affected by a combination of mainly domestic factors.

While popular because of their administrative ease and limited immediate budgetary pressures, the price controls carry substantial costs over the medium term. These include distorted signals to food producers, reduced incentives for the private sector to engage in the agriculture, and subsidizing well-off consumers alongside the low-income households. The production-related costs are particular high for most African countries where agriculture accounts for a large share of output and employment.<sup>11</sup> Temporary price controls can encourage food hoarding, especially among wealthier population with sufficient liquidity, exacerbating food shortages for the more vulnerable segments of the population.

The relatively wide-spread use of price controls is also inconsistent with the “first best” policy mix, which combines (i) allowing food prices to rise to provide accurate signals to producers, (ii) raising interest rates to mitigate inflationary pressures, and (iii) establishing well-targeted safety nets for the vulnerable.<sup>12</sup> While the administrative measures (e.g., price controls, export restrictions) can help relief food shortages temporarily, they are not sustainable in the medium term. A key challenge for Africa is then to improve functioning of the agricultural markets by removing barriers to competition, connect markets and consumers through building rural infrastructure and utilizing m-technology.

More than one third of the African countries surveyed introduced *restrictions or bans on exports* of agricultural products to safeguard adequate food supply in the short run. For example, in response to poor harvest conditions and increasing food price inflation the government of Tanzania reintroduced a 6-month ban on grain and maize exports in June 2011. By October 2011, the price of bag of maize received by farmers declined by one third, but the overall local food prices – especially in urban areas – remain high due to infrastructure bottlenecks. The ban of grain and maize was removed in October 2011. While bans may temporarily lower domestic food prices, the effects need to be weighed against the longer-term consequences of shutting off farmers from international markets and cuts in export (and often government) revenues. As the Tanzanian example illustrates, short-term social support to the most vulnerable together with increasing the agricultural output (both types of measures are discussed below) seem more suitable courses of action.

In low income countries with the high share of food in the CPI basket, the surge in food prices impacts negatively consumers, especially poor households, by reducing their purchasing power. The negative impact is even more acute if rising food prices raise inflationary expectations and thus accelerate underlying inflation. Even though not covered in our survey, *monetary policy* is frequently considered by policy makers to counter price shocks. In Africa, its effectiveness is often diminished by weak transmission channels and competing policy objectives (growth-inflation trade-off), besides structural rigidities. Monetary policy thus often reacts with delay and uses only moderate measures. This is illustrated by Kenya, which has been particularly affected by food-driven inflation (Figure 7).

In Kenya, with food (and fuel) price spikes, pressures stemming from expansionary fiscal stance, and depreciating exchange rate, the central bank has weighed trade-offs between (i) containing second-round effect of the food prices rises on inflation and (ii) stimulating growth.<sup>13</sup> To reduce inflation and anchor expectations, the Bank raised gradually its policy rate to 7 percent in August 2011. The rate was brought to the highest level in the past 5 years in October 2011 when the Central Bank

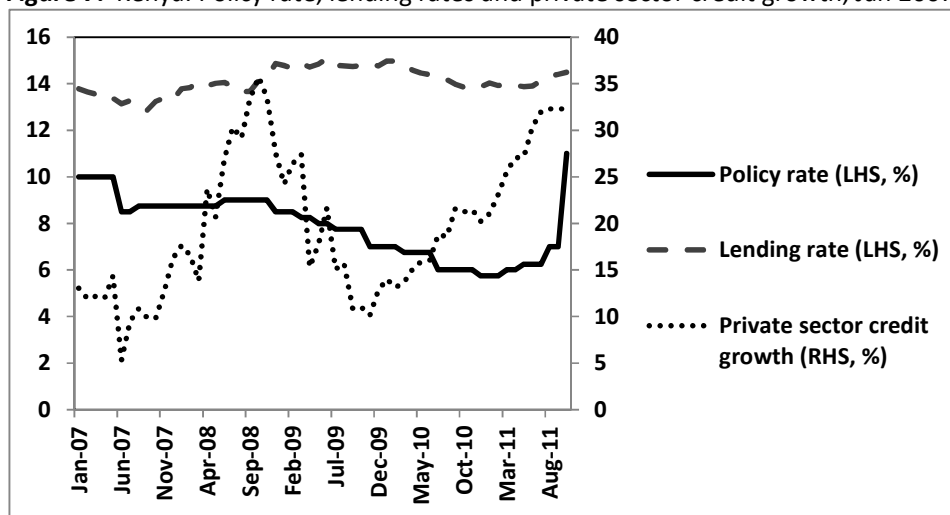
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<sup>11</sup> In Africa, agriculture accounts for 65% of employment, 25-30% of GDP, and over half of export proceeds. Since the late 1970s, growth in Africa’s agricultural sector has averaged 2 to 2.5% per year.

<sup>12</sup> In Africa policy rate changes are often not reflected in banks’ lending rates, making such advice less relevant.

raised it by 400 bps to contain inflation and stabilize the exchange rate.<sup>14</sup> At that point, the growth-inflation dilemma of the Central Bank became less acute since the high inflation– 17.1 percent in September—and the reduced confidence of the banking sector in the macro policy stance could hamper growth.<sup>15</sup>

**Figure 7.** Kenya: Policy rate, lending rates and private sector credit growth, Jan 2007 - Oct 2011



Source: The Central Bank of Kenya and IMF IFS database

Since in Kenya the overall inflation was impacted by loose fiscal stance and depreciating exchange rate, the adopted monetary tightening seemed an appropriate response. In the medium term, structural bottlenecks hampering local food supply and transmission of monetary policy need to be addressed.

#### 4.2 Social support to consumers and vulnerable groups

Within the social support measures, *food aid distribution, food-for-work programs and general fuel subsidies, subsidized food baskets and cash transfer programs* were commonly used in countries surveyed. The use of these measures ranged between one quarter of countries adopting cash transfer programs in both 2007/08 and 2010/11 and more than half distributing food in both 2007/08 and 2010/11. Most of the measures were targeted (e.g. food for work, food aid distribution) rather than general (e.g., fuel subsidy) and guided by households' characteristics (net food buyer' vs. 'net food seller'), their income levels, and functioning of local food markets. Since the absence of social protection schemes exposes fast delivery of targeted programs to leakages and inefficiencies (FAO 2008), African countries could develop permanent safety nets and scale them up in emergencies.

To counter steep acceleration in food prices and avoid a repeat of the 2010 riots, in 2011 the government of Mozambique proposed *issuing vouchers for a basic food basket for low-income workers*. The proposal has been put on hold due to affordability and possible leakage. Instead the government intends to scale-up its direct cash transfer programme for households with elderly,

<sup>14</sup> In any case, commercial banks lowered their lending rates with substantial delay and only marginally in response to policy rate changes during the global financial crisis in 2009 - 2010. Besides containing inflation, the rate increase was viewed as necessary to reduce capital outflows.

<sup>15</sup> According to the Kenya Central Statistical Office, inflation was driven by food and transport price annual increases (24.4 percent and 24.8 percent, respectively).

children and other vulnerable persons. For individuals less constrained in their ability to work, cash-for-work-programmes and other productive safety net programmes are being considered. A limited role for subsidies is envisaged only for essential foods, fuel for taxis, and temporary job programmes.

Some countries used innovative measures to address food shortages. For example, already in March – June 2008, Kenya was the first country in the world to use *mobile phones (M-PESA) for emergency cash transfers to the vulnerable groups in food insecure remote rural areas*. M-technology helped overcome the distance, the lack of good infrastructure and security concerns. The cash method was particularly effective in places where local food supplies are sufficient. The participation of the private sector (Safaricom) enhanced effectiveness of the operation, in part by shifting the risk of cash transfer to the third party (mobile operators). The innovative aspect lied also in raising rapidly the system's capacity to carry out bulk transfers and reach many recipients simultaneously, while adhering to the Central Bank's regulations (ALNAP Innovations, 2011).<sup>16</sup>

#### **4.3 Structural reforms to address supply-side bottlenecks**

A key challenge for food security and development of African countries has been the very low and stagnating (land) productivity of agriculture. Besides easing short term supply shortages, effective structural measures (e.g., rural infrastructure, land reform) can raise longer term productivity. It is encouraging that many African countries also embraced measures in this area, as part of their policy mix responding to food price increases. Specifically, more than half of the countries increased investment in rural infrastructure during at least one of the episodes, while more than quarter altered land lease arrangements in 2010/11. While budgetary allocations to agriculture increased in 60 percent of the countries in 2008/10, in most the levels are well below those of Maputo agreement.

Rwanda is an example of a country that has prioritized investments in agriculture and the provision of farm implements in recent years, which seems to have contributed to a boost in local production and a decline in the food CPI (and overall deflation) for almost a year. In Zambia the record-breaking maize harvests realised in 2010 and forecasted for 2011 have been achieved by combination of input subsidies, output price incentives, and favourable weather, which have kept food price inflation low.

#### **4.4 Differences in responses among Africa's subgroups and countries**

Differences in policy responses among sub-groups and individual countries have emerged, which may reflect differences in the ways that global food price increases impact countries at both the national and household level. Besides the level of development and the structure of the economy, other ('soft') factors such as political systems and cultural practices matter. To reflect the diversity of countries surveyed, sections below group as: (i) oil-rich countries; non-oil middle income countries and (iii) non-oil low-income countries. Where relevant, references are made to non-oil fragile LICs (Annex I).

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<sup>16</sup> In Swaziland during November 2007 – April 2008, the Save the Children teamed up for the first time with the Standard Bank Swaziland to deliver emergency cash transfers to 7500 households, as a part of a 50:50 cash-food package in a food emergency caused by drought. To receive the cash transfer, about 6,100 previously mostly unbanked households opened new savings accounts and received their cash with an ATM card, which allowed one free withdrawal per month. The cash distribution was accompanied by general financial literacy training.



*Oil exporters* intervened heavily at macro level, but their direct interventions at the household level were limited. They implemented structural reforms (investment in rural infrastructure) to diversify their production and export bases. While almost all oil exporters lowered import tariffs on food during the first food price hike, the response was much less common in 2010/2011 when their fiscal balances deteriorated. In fact, more than 40 percent of the oil exporters refrained from any type of market intervention in 2010/11, consistently with their lower vulnerability to macro shocks (Figure 2).

*Non-oil middle income countries* (MICs) have refrained from macro level interventions during both food price spikes, consistently with their relatively low macro vulnerability to price shocks. Their policy responses have focused on direct interventions for targeted groups to address local food market failures and reduce wide inequalities that characterize these economies. Food-for-work programs were particularly popular—implemented in 2/3 of the countries in 2007/08 and half in 2010/11—as a way to address food shortages (Table 2). Given their relatively well-developed infrastructure, improvements in rural infrastructure were less prevalent in MICs than in other sub-groups.

**Table 2.** Policy measures in response to food spikes, by country subgroups, 2007/08 and 2010/11

		Oil-exporters (7)		MICs, non-oil (6)		LICs, non-oil (20)	
		2007/08	2010/11	2007/08	2010/11	2007/08	2010/11
		(in percent of countries in sub-groups)					
Market/economy-wide	Release grains from reserves	29	0	17	17	60	55
	Cut of import tariffs	100	29	17	0	60	50
	VAT or sales tax cut	57	0	33	0	25	25
	Export restrictions or ban	29	14	0	0	50	40
	Price controls	71	57	17	17	60	60
Micro	Cash transfers	14	29	33	0	40	35
	Transport vouchers	29	29	0	0	20	20
	Food for work	29	29	67	50	50	50
	Food distribution	29	43	50	33	70	65
	Subsidized food basket	14	14	33	33	45	50
	Fuel subsidies	29	14	0	17	50	55
Structural	Investment in rural infrastructure	71	71	33	33	65	65
	Budget allocation to agriculture	86	43	33	17	70	55
	Land lease arrangements	14	43	33	33	20	20

**Source:** Authors' calculations based on the UNDP RBA survey.

Governments in *non-oil low income countries* (LICs) continued to utilize all groups of interventions during both food price increases, reflecting their high macro vulnerability as well as imperfections in functioning of local food markets. In both years, more than half of the countries in this sub-group has tapped into strategic grain reserves.

Most *fragile LICs* have implemented food aid distribution and food-for-work programs except Eritrea and Liberia, which applied cash transfers in 2007/08 or 2010/11. Eritrea has expressed preference for 'cash-for-work' programs vs. 'food-for-work' program, indicating that low income rather than food shortages were perceived as key factor behind food insecurity. Experience with direct support to vulnerable groups in other countries indicates that cash-for-work programs have proven to be better targeted than food for work programs due to their 'self-selection' aspect -- since the cash award in these program tends to be very low, only poor and food insecure people are likely to participate. However, given the low income levels, wide-spread unemployment and working poverty in Eritrea, this cash-for-work may not be well targeted to reach the most vulnerable segments of population.<sup>17</sup>

About half of the fragile LICs have increased outlays on rural infrastructure; some resorted to measures such as rapidly increased access to credit or land. For example, the Central Bank of Liberia has set aside about \$2 million for credit to farmers for production of rice. The Liberian government has also made available free land for agro-production by the private sector. In Sierra Leone, the government stimulated local agricultural production by providing inputs, technology and

<sup>17</sup> As in some other countries, domestic policy responses were complemented by actions of international and regional organizations. For example, the AfDB has provided support to the agricultural sector through the grant allocation (of UA 2 million) from the African Food Crisis Response, approved in 2009.

infrastructure for agricultural processing and storage. However if local markets are not integrated with national ones – as often the case in fragile states -- increased production can stimulate large drops in local food prices and thus income of agricultural producers and workers (FAO, 2008).

## **5. Impact of rising prices on household poverty and welfare**

The combinations of the initial conditions (e.g., country's location, structural characteristics), the magnitude of the food price increases, and responses from households, firms and government influence household welfare. Assessing the impact of rising food prices on household welfare is complex for a number of reasons, including: the multiple factors that go into household production and consumption of food, besides food prices; transitory effects vs. effects and behavioral responses that will occur in the longer-term; and the costs and complexities associated with monitoring food intake at household level.

Household level rapid food-security assessments conducted by the World Food Programme (WFP) have combined quantitative household surveys with qualitative information collected at community level to provide evidence of the 'real-time' impacts of the unfolding food crisis (Sanogo, 2009). In 2008, 24 such assessments were done, including 10 in sub-Saharan Africa, reporting consistent evidence of households reducing the quality and quantity of food consumed as a result of increasing food prices (and other factors). Some evidence of reductions in health care visits or health expenditures, increased school drop-outs, or sale of economic assets has also emerged. Evidence from recent financial crises points to consistent food-based coping strategies among poor households across countries. They follow a progressive pattern from minor food substitutions and modifications in diet quality to more extreme measures such as going for entire days without eating (Klotz et al, 2008).

The social groups most affected were the biologically vulnerable groups (i.e. children, chronically ill) and the economically vulnerable households (i.e. the urban poor, landless, pastoralists, and food-deficit small-farmers). For instance, in Addis Ababa the proportion of households consuming an inadequate diet increased from 36 to 60 percent between 2007 and 2008 (Sanogo, 2009). In Greater Monrovia in Liberia the proportion of households designated as having an inadequate level of food consumption increased from 13 to 23 percent primarily as a result of increasing rice prices (Republic of Liberia 2010). The data collection from 2010 showed that the situation had improved with the recovery of rice prices and the share of food insecure households was estimated at 8 percent.

A number of studies have used historical household survey data to simulate the effects of the food price spikes in static general or partial equilibrium models. Following an approach by Deaton (1989), the effect on poverty is typically estimated by adjusting current level of household income by the price change taking into account that households can be simultaneously producers and consumers of different food items. This income effect and the proximity of the household to the poverty line will help determine if the household falls into poverty or not because of the price changes.<sup>18</sup>

The poverty impact of rising prices falls heaviest on net-buyers of food, that is the urban poor and rural landless, but increasingly also on subsistence farmers who are often net-buyers of food (Wodon et al, 2008; Zezza et al, 2008). Where rural infrastructure, storage facilities and financial services are under-developed farmers often have to sell for a low price at harvest time and buy at a

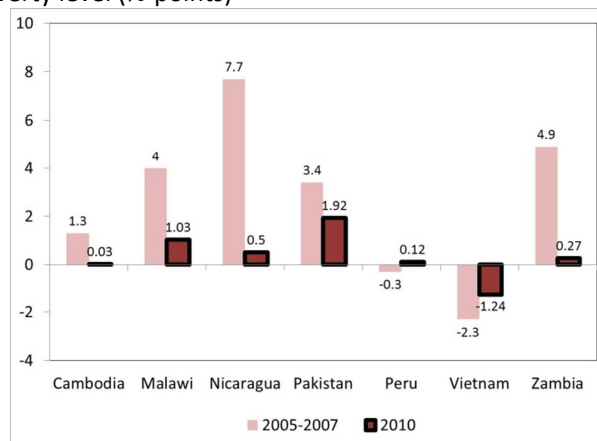
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<sup>18</sup> Assumptions include: common price changes across countries; considering only effects from rising food prices not oil prices; the effects are 'short run'; the analyses typically do not incorporate possible mitigating measures, such as food subsidies that might be established, or increased, to dampen the impact of the food price shock; the assumed increase in the producer price is the same as the increase in the consumer price.

high price during the lean season in order to smooth their consumption (Barret, 2005). This exacerbates their net-buyer status and vulnerability to food price volatility.

On the face of it, the poverty impacts of the 2010/11 price spikes appear more limited than in 2007/08. In 2008, the World Bank estimated that rising prices had led to a short-term surge of 105 million more extreme poor (living on less than \$1.25 a day in purchasing power parities) in the developing world (Ivanic and Martin, 2008). The updated analysis of 2011 suggested that the comparable rise in prices in the second half of 2010 led to 44 million more poor (Ivanic et al., 2010). In Malawi, for instance, poverty incidence went up by an estimated 4 percentage points in 2007/08 but only by 1 percentage point in 2010 (Figure 8). In Zambia, the other African country where short term poverty changes were estimated in the two World Bank studies, the impact in 2007/08 was an increase in poverty incidence by almost 5 percentage points. In 2010 it was only 0.27 percent.

**Figure 8.** Change in poverty level (%-points)



**Source:** Own computations based on Ivanic and Martin (2008) and Ivanic et al (2011).

These estimates of short term poverty impacts have been quoted frequently during the global debate on the impact of rising food prices and have framed the response by the international community. However, they come with important caveats. Firstly, the estimates are a result of simulations on micro-economic models that are partial equilibrium and use historical household data as well as a number of simplifying assumptions. They represent more an order of magnitude assessment of who is vulnerable and where they live. Secondly, the estimates consider the impact from changes in food prices, not other commodities such as oil, which tends to have large impacts in developing countries, and have been very important in both 2007/08 and 2010/11. Thirdly, there is some disagreement over the impact of second and third round effects of rising food prices; for instance whether wages for un-skilled labor increase with prices and the degree to which substitution to other commodities can shield the poor from the impacts of rising prices in some markets (Heady and Fan, 2010).

An important factor not accounted for in the World Bank estimates relates to changes in the wider economic environment, especially the effects from economic growth. Using data from the World Gallup Poll on self-reported food security, Heady (2011) finds that despite rising food prices in from 2005 to 2008 food security is likely to have improved during the period given rapid economic growth and limited inflation especially in China and India.

At the same time, even African middle income countries with relatively moderate food price inflation, such as Swaziland, experienced deteriorating food security during 2010 and 2011 especially if rising food prices were combined with other shocks. Specifically, the UN cross-sectional, nationally representative household survey on the impact of the fiscal crisis revealed that rising food prices

were the most common economic shock experienced by households in 2011, cited by one out of four households. The impact of rising food prices was compounded by a severe fiscal crisis, which delayed delivery of some essential services and led to income losses (UN Swaziland, 2012).

At the end of 2011, food consumption patterns pointed to households under stress, where almost half of adults consumed two or less meals per day. Another common coping method, which also impacted welfare negatively, was reallocating food consumption to cheaper and often less nutritious items. This was done in almost half of the (1334) households surveyed, and in one third on a daily basis. As the example of Swaziland illustrates, the impact of rising food prices cannot be underestimated and calls for timely and appropriate policy actions even when the food price increases are not alarmingly high.

## **6. Conclusions**

In this paper we explored the heterogeneity of impacts during the two spikes in food prices in 2007/08 and 2010/11 and the differences in the policy responses among African countries. We first established the linkages between changes in international food prices, the impact on domestic prices, and the range of responses available to local policy makers. Evidence showed that the impact on local markets and prices was more severe during the first round of price spikes. Pass-through of global price changes to local markets and inflation levels was more muted in 2010-11 because of differences in commodities affected, supply responses from several African countries, and policy responses.

We also presented findings from a unique survey of policy response by African governments to food price increases. These responses were grouped and presented according to their macro/market, micro/social or structural focus, and the country-specific circumstances. Governments in all but two countries surveyed intervened to contain food price surges in both (2007/08 and 2010/11) episodes. At the same time, some countries viewed the food crisis as an opportunity to try innovative responses and/or progress with politically sensitive structural reforms that previously stalled. Cuts to import tariffs on food items, food aid distribution and price controls were the most common among the short-term policy responses 2007/08. In 2010/11, more than half of the countries surveyed relied again on food aid distribution as a way to reach vulnerable groups, which became the most common short term policy response. Among the economy-wide market interventions, with the marked decline in use of tariff cuts to only 1/3 of countries, direct price controls became the most frequently applied policy.

Finally, we discussed recent studies on the impact of rising food prices on household welfare. While food price inflation may have raised vulnerability of net food buyers, when accounting for economic growth, the overall poverty situation might have improved over the period of the two price spikes. We also pointed out though that the aggregate numbers mask differences across regions and countries. For example in Swaziland, where food price inflation was 'only' 8.6 percent in December 2011 and in mid-single digits throughout 2011, the impact on household welfare in terms of food consumption and food security was severe, as the shock from rising food prices was compounded by the fiscal crisis.

Going forward policy makers need to focus on reducing the vulnerability and raising resilience of countries, communities and individuals to price shocks. This requires both longer-term efforts aimed at realising the agricultural productivity, improving the functioning of credit and labour markets, and strengthening national social protection schemes. Efforts to mitigate and adapt to the impacts of climate change will be crucial as the continent, largely because of its dependence on agriculture and natural resources, is highly vulnerable to changes in the global climate, even though it contributed

the least to the emissions. Recent reports of large-scale leases of land in several African countries, by companies and governments from third countries, are symptomatic of the potential for agricultural in Africa. Land-lease arrangements are often attractive for their promises of revenues, jobs and technology transfers but without proper regulatory framework these benefits will remain elusive.

The efforts to increase agricultural productivity in Africa supply response should be reinforced through removing impediments to cross-border trade, improving agricultural infrastructure and increasing investments in R&D. Export bans can be counter-productive as they dampen incentives to produce and decrease government revenues where exports are taxed. In fact, the experience from 2007/08 price spike showed how export restrictions can transmit price volatility to neighbouring countries without providing much relief at home. Rather than stifle agricultural markets, governments should be encouraged to develop these. In the longer term increased regional trade and the opening of agricultural markets is likely to stimulate growth and rural development.

A key message from the paper is that African countries need to strive for the right policy mix, including timing of measures. Ideally prices would rise for producers but consumers would be protected during the price spike. Measures need to be well coordinated too—cuts in taxes without identifying other sources revenue can erode tax base and eventually social expenditures. Also, excessively tight monetary policy could reduce farmers' access to credit, and offset other measures, including subsidized credit. Administrative solutions such as price caps and subsidies that are put in place without any 'exit strategy' often strain already weak institutions, create opportunities for rent-seeking and hurt consumers, especially the poor. Targeted interventions such as cash transfers and labour-based programmes are more likely to reduce vulnerability to shocks and enable the poor to make small but crucial investments, accumulate some capital or expand their economic activity. This enhances resilience of the poor and their ability to bounce-back after a shock. In this context, social protection should not be confined to a safety net during crisis, but put at the centre of the national development frameworks as an enabler of inclusive growth.

More broadly, research on the 2011 African Human Development Report on food security has shown the importance of domestic sources of price volatility, more than changes in international prices. In particular, seasonally induced volatility appears to have a strong effect on food security and human development indicators compared to long-term price increases and sudden spikes.<sup>19</sup> The prevalence of seasonality, as well as large regional variations in prices seen in many countries, further underscores the need to focus on factors that help smooth domestic prices and make markets work better such as rural infrastructure, storage facilities, credit facilities, crop insurance and extension services.

Concerted efforts aimed at improving accountability in international food markets are needed at the global level. The G20 meeting in Cannes issued an action plan on food price volatility and agriculture, proposing new measures to bolster productivity, limit commodity speculation, and improve mechanisms for monitoring stock levels. Efforts to decouple the food and fuel markets would also help and can be facilitated by lowering, or—better yet—eliminating, ethanol subsidies in Europe and the US. International partners need to follow through on pledges to make available additional concessional support to develop agriculture in Africa, develop and strengthen value chains and implement global agricultural reforms such as those envisaged in the Doha-round of trade talks.

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<sup>19</sup> In most of sub-Saharan Africa, small farmers sell part of their food production right after the harvest (when prices are low) to cover expenses and repay debts contracted during the lean season. After they have exhausted their food stocks, they start buying food 6-8 months later (when food prices are high) with cash obtained by selling small animals, doing casual work, migrating, borrowing, or getting enrolled in food aid programs. The result is an annual 'hunger season' of 3-4 months in the build up to the harvest period.

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