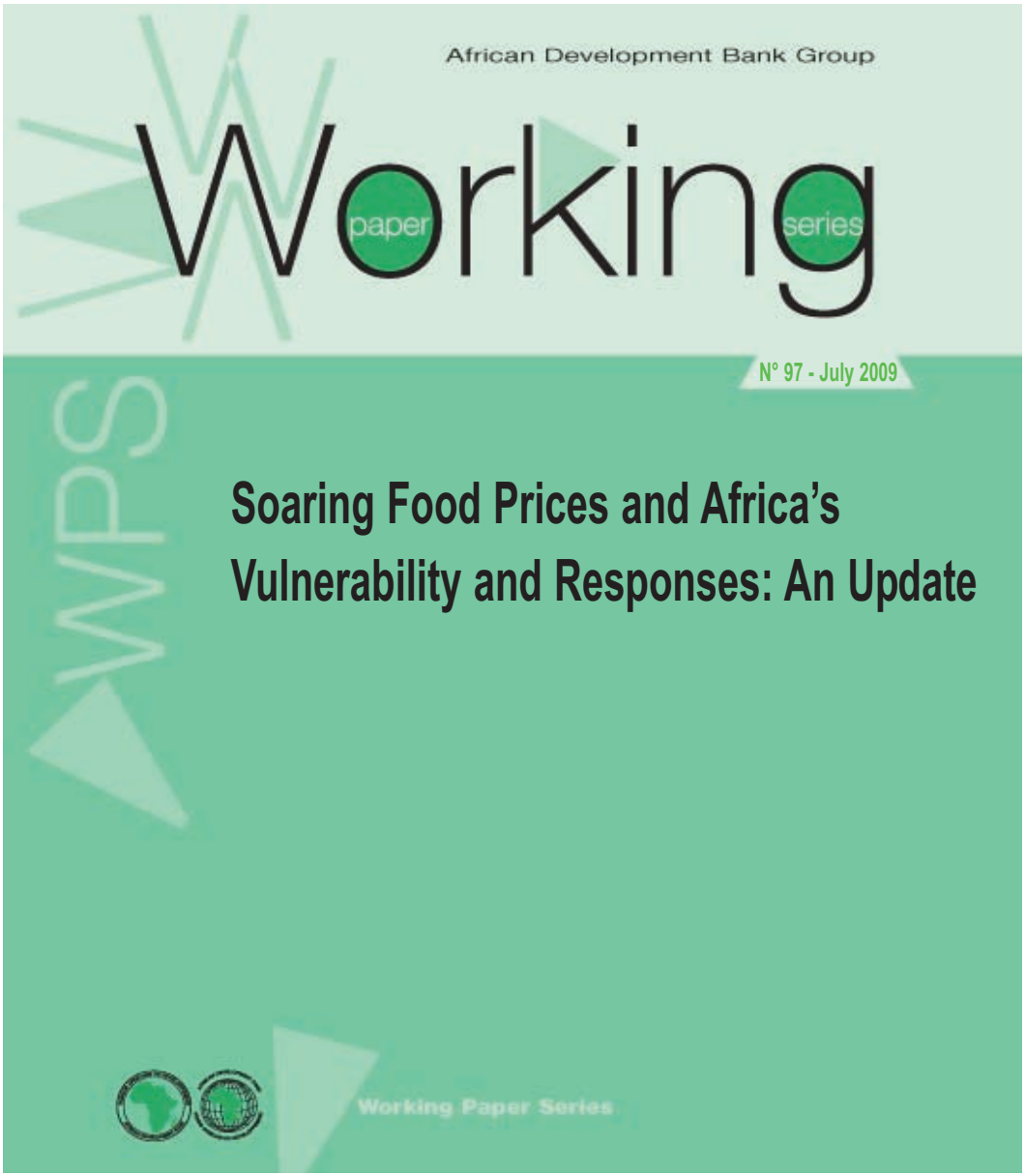

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AFRICAN DEVELOPMENT BANK GROUP

Soaring Food Prices and Africa's[1] Vulnerability and Responses: An Update

Working Paper No. 97
July 2009

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Office of the Chief Economist

Abstract

Abdul B. Kamara, Albert Mafusire, Vincent Castel, Marianne Kurzweil, Desire Vencatachellum and Laureline Pla.

Food prices rose rapidly in 2007 and in early 2008, but started falling during the second half of 2008. Despite this fall, many African countries are yet to recover from the severe economic and social strain caused by the sudden escalation of prices. This situation, however, has triggered renewed attention that could boost agriculture and help it acquire its rightful place on Africa's development agenda. Indeed, numerous opportunities to exploit Africa's unused production potential exist, but this requires appropriate policy responses, accompanied by adequate investments to enhance Africa's agricultural revitalization.

This paper seeks to review current food prices on the continent and present a country level vulnerability analysis that formed the basis for the Bank's operational and policy response to food price increases.

Keywords: Africa, food, crisis, vulnerability, responses
JEL classification: Q11, Q13, Q18

Contents

1. Introduction

The recent episode of high food prices was more severe than previous ones and its impact is expected to persist over the short-to-medium term. The sharp increases in food prices from the last quarter of 2007 to early 2008 triggered various reactions around the world, including Africa, and raised grave concerns about food security in the Bank's Regional Member Countries (RMCs). Since these developments, some changes have occurred on global cereal markets. From June 2008 to January 2009, international market prices for most cereals, whose prices had risen the most (maize, barley, wheat and rice), have fallen. This fall was uneven and more pronounced for barley (traded at December 2006 price in January 2009) than for rice (still twice more expensive in January 2009 than in December 2006) (IMF, 2008). Furthermore, the actual picture in African countries remains mixed, as the fall in cereal prices observed on global markets does not seem to be reflected on a uniform fall in cereal prices in all African countries.

These developments are of particular concern as cereals and tuber crops (notably cassava) constitute about 55% of the household's food basket (African Development Bank, 2008). Over the years, growth in cereals consumption in Africa outpaced production due to several reasons, including inadequate policy environment and poor incentives in the agricultural sector, weak capacity and inadequate investment flows, and climate change. As a result, the continent is a net importer of cereals and dairy products. The FAO estimates Africa's cereal import bill at about USD 21.748 billion in 2008 and about USD 9.8 billion in Sub-Saharan Africa in 2008, translating into 30% and 35% increase over the 2007 level, respectively. Generally, the high food prices hit developing countries harder, with these countries recording a 42% increase over 2007, compared to 19% for developed countries (IMF, 2008; FAO, 2008c). Low-Income Food-Deficit Countries (LIFDCs) are particularly under stress as they are also net importers of petroleum products and staple food. In its November 2008 issue of Food Outlook, the FAO estimated the total food import bill of the Low-Income Food-Deficit Countries (LIFDCs) rose by 32% in 2008 (to USD 117 billion) relatively to 2007.

In the absence of appropriate measures, rising food prices have the potential to roll back progress toward poverty reduction and the attainment of MDGs. Low-income households spend a significantly large proportion of their income on food. These figures are as high as 57% in Tanzania and 62.5% in Comoros, (African Development Bank Statistics, ICP database).

Recent food riots and demonstrations in Africa and elsewhere in the developing world underscored the gravity of the burden of high food prices on households. Some African countries responded through measures designed to either reduce prices and/or increase access to food (African Development Bank, 2008). However, these responses have implications on fiscal balances and balance of payments positions. It is against this background that criteria for determining relative country vulnerability were developed to guide Bank responses to the crisis. On the basis of this index, the Bank identified 27 RMCs as critically in need of food assistance, with another 12 requiring assistance (African Development Bank, 2008). Even though the situation has considerably evolved from what it was in mid-2008, the issues of food prices and food security, in particular, remain critical challenges for the continent.

The purpose of this paper is to provide a review of recent food price movements, describe the methodology that was used to assess the relative country vulnerability with the aim of helping Bank operations and RMCs design appropriate responses to the food crisis.

The paper constructs a vulnerability index using indicators that measure a country's ability to pay for food imports, the degree of urbanization and import dependency. It is a static approach that makes it possible to assess a country's vulnerability over a one-year period. This forms the basis for assessing the severity of the likely impact and formulating appropriate policy responses.

In the next section, a historical perspective of food price movements is presented. This is followed by an analysis of recent price increases and factors driving price movements. Section 2 takes a special look at trends and drivers of food prices at the global level and in Africa. The description of the vulnerability index is provided in Section 3, followed by an assessment of the relative vulnerability of African countries. Section 4 discusses the implications of food price increases and vulnerability. The African Development Bank's response to the crisis and conclusions have been provided in Sections 5 and 6, respectively.

2. Trends in Global Food Prices

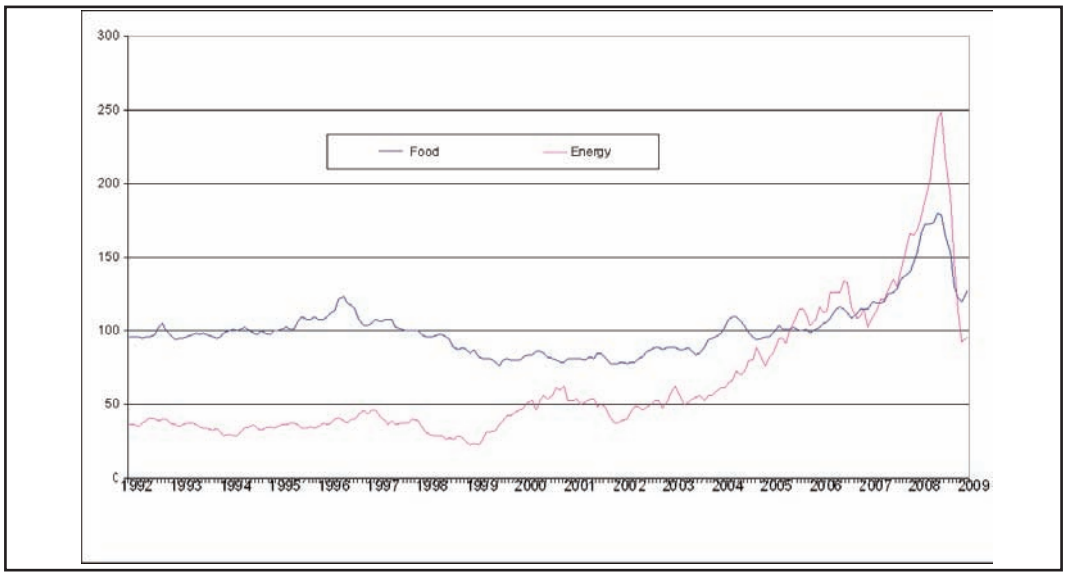
2.1 Historical Perspective

Contrary to the general belief that the food prices spike of 2007 was a surprise, real food price increases actually started as far back as 2003. Food prices receded from an earlier upward movement in 1995 to reach their lowest level in two decades in July 1999. The prices, however, rose slowly in the following years until 2004

when a sudden spike was noticed before leveling off in 2005. It was only after the acceleration in food prices in 2006 and 2007 that the world recognized the negative impacts on the majority of the world's poor and the threat to global macroeconomic stability. Compounding the situation is the coincidence of the recent in food price increase with high energy prices, and indeed all commodity prices (Figure. 1). Having reached their peak during the first half of 2008, food prices have fallen sharply to a level just below an earlier peak in 1996. That is from USD 123.2 per ton in May 1996 to USD 119.6 per ton in December 2008.

Africa has suffered severe food crises in the past, but most of these were related to weather shocks or conflicts. The recent food crisis was different given that it was the first time in history that the continent was threatened by a food crisis resulting from higher food prices rather than by a physical absence of food. Another new dimension was that recent high food prices disproportionately affected the politically more sensitive urban areas – 'urban hunger' – compared to the traditional countryside as in the past.

Figure 1: Monthly Food and Energy Price (Indices, 2005=100)



Data source: IMF online data, 2009

(2)For example, the 1984 drought in Ethiopia killed more than one million people.

2.2 Recent trends in Food Prices

Globally, the prices of maize, wheat and rice rose the most in 2008 (Figure 2). Over this period, the price of rice, a major staple crop on the continent doubled to reach a record high of more than USD 1,000 per ton in April 2008 (up from USD 373 per ton in early January); the average wheat price in March 2008 stood at USD 439 per ton (over a 100% increase over the 2007). The average price of maize increased by about 42%, from USD 171 per ton in November 2007 to USD 288 per ton in June 2008. This escalation of food prices was largely a reflection of the growing energy cost, a vital input in crop production and processing, as well as market speculation due to lower yields, and a reallocation of crop land to biofuel production. A general comparison of food prices in 2005 and 2007 further depicts the trends, with 2007 clearly emerging as the year of continuous price escalation. These trends hold true not only for cereals, but also for sugar, dairy, meat and oils.

All prices fell during the second half of 2008. In January 2009, commodity prices stood at USD 173 for maize, USD 615 for rice, USD 122 for barley and USD 239 for wheat. Since their respective peaks, this trend represents a 51% decrease for barley, 39% decrease for rice, 40% decrease for maize and 44% decrease for wheat[3].

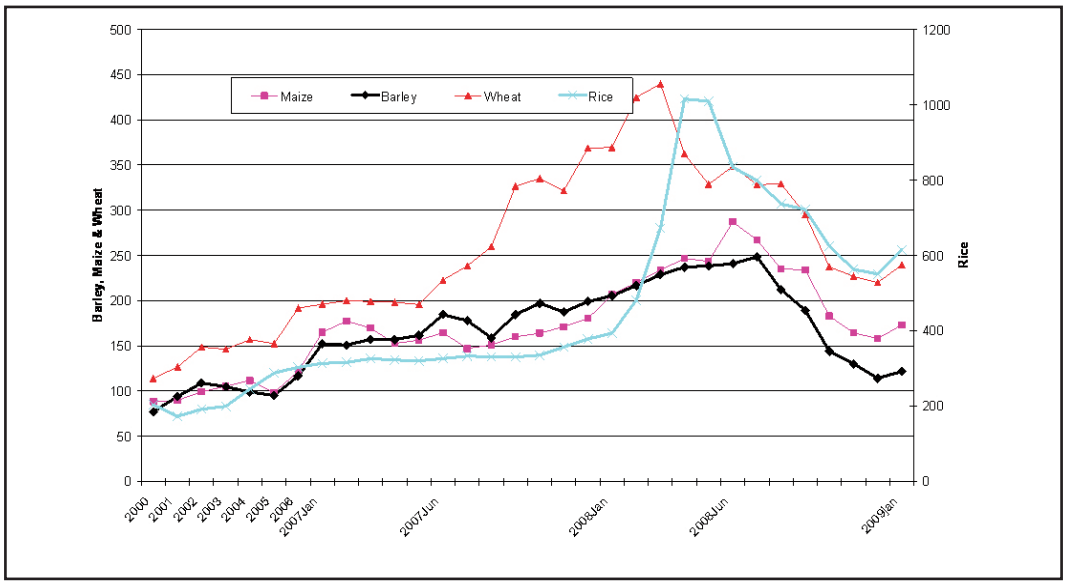
The food price index temporarily dropped from its peak of 180 in early June 2008 to about 119.1 in December 2008 (Figure 1), and has since risen to 127.4 in January 2009. The cereal price index declined by about 13% over the same period.

To an extent, this trend also holds true for non-cereals. For example, the price of oil and fats dropped by more than 6% between August 2008 and January 2009. While beef prices had increased by 70% between May 2008 and August 2008, they fell by 16% between September 2008 and January 2009. Sugar prices were relatively stable over the 2004-mid 2008 period, but fell by 17% between August 2008 and January 2009.

Given weakening global commodity demand as a result of the financial crisis, it is expected that the fall in food prices may be sustained, from the combined effect of falling energy prices, the relaxation of trade control mechanisms and increased availability of wheat and better maize yields, especially in the United

[3]The recorded monthly price peaks are as follows: Barley : USD 248.3 in July 08; Maize: USD 287.1 in June 08; Wheat : USD 348.6 in June 08; Rice : USD 1015.2 in April 2008.

Figure 2: Food Price Trends (USD per metric ton)



Data Source: IMF online data, 2009

States. The correlation between food and energy prices is particularly noticeable. For instance, the general fall in the food price index started just about a month earlier than the fall in crude oil prices. In January 2009, the New York price index for crude oil dropped to less than USD 33.20 per barrel, representing a 78% fall since its peak (USD 147.27) in July 2008. Similarly, since its peak in June 2008 the prices of natural gas had fallen by about 59% in January 2009. In January 2009 there were already some signs that food prices might stabilize, but at a level higher than that of 2006.

In spite of these general trends, country experiences remain mixed.

In West Africa a mixed picture has been observed for cereal prices. Senegal, in particular, experienced a huge jump in rice prices, from just above CFAF 30,000 per 100 kg, to more than CFAF 45,000 per 100 kg between June and July 2008. In September 2008, rice prices were still 81% higher than a year before. In Burkina Faso, on the other hand, imported rice prices fell from their peak of about CFAF 45,000 in June 2008 to below CFAF 40,000 per 100 kg, but remained flat at

CFAF 39,000 in July and August 2008. In Mali, no fall was reported as prices stabilized at above CFAF 35,000 per 100kg. Over all, in January 2009, rice prices somehow stabilized in Niger, Burkina Faso and Mali, but are still 50%, 60% and 29% higher than a year earlier, respectively. FAO attributes this increase to the sharp depreciation of the CFAF against the dollar between July and November 2008 (from 0.24 USD/100CFAF to 0.19USD/100CFAF), and the relatively low initial tariff levels. FAO however recognizes a series of measures that have been implemented by governments in the region, including the waiver on import tariffs. On the other hand, in Nigeria, the appreciation of the Naira against the dollar and the reduction of tariff levels on rice led to a price decline on some local food markets (16% between May and September 2008). However, the sharp depreciation of the Naira against the dollar (20% during the last quarter of 2008) due to falling oil prices in November and December 2008 may have a negative impact on rice prices, contributing to another general food price increase in the country (FAO, 2008b ; FAO, 2009).

In Southern Africa, prices in South Africa have been declining since July 2008. In food-importing countries such as Mozambique and Zimbabwe, prices are still increasing while in other countries such as Malawi and Zambia, they have stabilized. In November 2008, prices for maize were 107% and 73% higher for both countries than in November 2007 (FAO, 2008b), respectively.

In East Africa, maize prices almost tripled in 2008 over the previous year, and were higher than USD 600 per ton in September 2008. In Kenya, maize prices were close to their peak (USD 379 - May 2008) and above USD 331 per ton in January 2009, which represents a 49% increase over the previous year. Tanzania has experienced a continuous fall in maize prices, from about USD 330 per ton in January 2008, to about USD 240 in July 2008 following a good harvest. In January 2009, maize prices in Tanzania were 5% lower compared to a year earlier. In Ethiopia, a sharp decline in prices has also been noticed since October 2008, but maize prices in January 2009 were still 13% higher than in the previous year. In Sudan, Eritrea and Ethiopia, wheat prices have been increasing contrary to developments on the international market. Like other cereals, wheat prices vary considerably between these countries (Ethiopia: USD 700 per ton; Eritrea USD 1800 - end of July 2008). By September 2008, the wheat prices in Eritrea had more than doubled on a year-to-year basis (114% increase). In December 2008, maize prices in Sudan and Ethiopia had increased by 18% and 52%, respectively, compared to a year

earlier. Similarly in Khartoum (Sudan), sorghum was quoted to trade at above USD 406 per ton in October 2008, which is twice the 2007 price (FAO, 2008b; FAO, 2009).

In Central Africa, food prices are still unstable in Central African Republic, Chad and the Democratic Republic of the Congo, due to civil unrest. In Cameroon, the recovery of the poultry industry after the Avian Influenza of 2006 negatively affected cereal prices. The situation in the country is worsened due to its high dependency on imported rice. The government took action in signing an agreement with staple food traders in January 2009 to stabilize the price of imported food products. The agreement will run until June 2009 (FAO, 2009b)

In North Africa, good crop prospects in Morocco and Egypt (for June 2009) are expected to lessen pressure on food prices in the coming month. In Egypt, this may have a positive effect on inflation which was mainly driven by raising food prices. The yearly inflation rate dropped from 30.9 % in August 2008 to 16.3 in January 2009 (FAO, 2009b).

The large cereals price differences between African countries are a reflection of market fragmentation, arising mainly from government controls, structural deficits and poor transportation infrastructure. With the exception of South Africa, these trends also illustrate weaknesses in the functioning of the African food market, which does not reflect movements in international markets, in particular, during periods of price decline (FAO, 2008b). The prices on African markets remain extremely high, increasing the pressure on household budgets, especially in food-deficit countries. Even though prices have started to decline in some countries, there is no real evidence of a long-term general downward trend, and it seems that prices are now stabilizing at very high levels. However, crop yields in several countries seem to be more favorable for 2009. This may ease the pressure on some national markets, at least in the short-term (FAO, 2009).

2.3 Drivers of Short-Term Trends

The causes of high cereal prices are both of a temporal and structural nature. Adverse weather conditions, stock build-ups, financial market crisis, the dollar's depreciation, high fuel prices, price controls, and export bans are among the temporal factors pushing up food prices (IMF, 2008; World Bank, 2008; FAO, 2008; IFAD, 2008). Apart from declining production in major world producing countries, for example, drought in Australia, deep frost in China, flooding in parts of South Asia, cold weather in Vietnam, pro-

duction by several African countries was negatively affected by bad weather in 2006. Chad and Tanzania were hit by drought while Mozambique was affected by floods in 2006. Ghana experienced several weather shocks, including prolonged droughts followed by floods in August 2007 and by another spell of drought in 2008. Similar conditions were also experienced in Angola's cereal-producing regions. As a response to low yields, food-producing countries fill demand gaps by depleting their own stocks.

Coupled with the crisis in the financial markets, low stock levels triggered speculative demand on commodity futures markets, contributing to spikes in food prices. For instance, wheat and soybeans futures prices on US markets more than doubled in a year to March 2008. Corn futures prices, on the other hand, have risen from about USD 3.50 to USD 7.60 per bushel in a year from June 2007. Moreover, rising fuel prices affected food prices in importing countries as they were faced with higher transportation costs, and rising food production costs. The poor state of African infrastructure and limited accessibility to some parts of Africa increase the transport costs even further.

Inappropriate policy responses in the form of export bans and price controls on cereals, especially rice, in China, Pakistan, India and Vietnam resulted in lower prices for producers who responded by holding on to supplies to the world market, fuelling price increases at the global level. Some African countries (Nigeria, Egypt, and Ethiopia) adopted similar policies on staple food products, but that did not help; instead it worsened the situation. However, in most of these countries, policy measures related to export restrictions were relaxed during the second half of 2008 (Vietnam-July 2008, Pakistan and India-October 2008). In December 2008, China reduced export taxes for wheat and wheat flour from 20% and 25% to 3% and 8%, respectively. Furthermore, China cancelled a 5% export tax on maize and soybeans and a 10% tax on maize flour (FAO, 2008b).

Even if the effects seem to be acute, the changing structure in agricultural commodity use and evolving production technologies at the global level will have long-term implications on food prices (Asian Development Bank, 2008). Increased consumption of meat, dairy and fish products has led to growing use of cereals for feed production (Steinfeld et al., 2006). On a calorie-for-calorie basis, more cereals are needed to produce meat than bread. In addition, cereal requirements for bio-fuel production increased by 22% over the 2007-2008 period and account for 5% of the world cereal production (UN, 2009).

As African agriculture is mainly small-scale and subsistence-based the adoption of techniques associated with economies of scale remains difficult. In addition, the move towards high-yielding varieties that require intensive fertilizer use and irrigation also contributes to rising production costs, especially as expenditures on energy use increase (Steinfeld et al., 2006). All these factors point to increasing production costs that essentially are being passed on to the consumer in the form of higher prices and affect the continent's competitiveness.

The strong yield increase for cereal production in 2008 (6.6% higher than in 2007) has reduced speculative pressure on food prices as the global cereal supply and demand balance is getting stabilized. According to the FAO, the global cereal stock will increase to 496 million tonnes (highest level since 2002) by the end of the next cropping season. At the same time, the reduced demand for crops by the agro-industry and the livestock sectors (used as feed) due to the current economic crisis may contribute to the global downward trends in crop prices, especially during the first half of 2009. As a result of these trends, the prices of wheat and maize on international markets were 33% and 17% lower in January 2009 than a year before and 50% and 40% lower than their recent peak values in February 2008 (for wheat) and in June 2008 (for rice). Rice prices have, however, not followed these trends. In January 2009, global market prices were 59% higher than a year before. Nevertheless the situation may worsen during the course of the year, as a result of forecasted lower cereal production in 2009 due to a reduced planted area, especially in the USA and Europe, and drought or low precipitation in China, India and Latin America (FAO, 2009).

3. Cereal Vulnerability of African Countries

3.1 Africa's Cereal Situation

Africa is currently a net importer of cereals, yet cereals constitute a large share of the continent's food basket. Cereals, for example, constitute 69% of total calorie intake in Niger, 64% in Egypt, 58% in Malawi, 54% in Sierra Leone, 57% in Algeria, 53% in Madagascar, and 36% in Liberia (Annex A). Despite the growing importance of cereals in the food basket, growth in cereal production in Africa continues to lag behind consumption especially for key cereals like rice and wheat. This situation is, partly, due to declining cereal yields, especially rice (a major staple), with rice yields in most African countries only a third of global averages. However, demand for cereals has also been growing, not only because of population

growth, but also due to changing tastes, largely in favor of imported varieties, creating further pressure on foreign exchange to foot the import bills.

Before the late 1970s, the continent was self-sufficient in all food crops except for wheat. This position changed as the population grew, tastes and lifestyles changed and production declined. The urbanization level also increased coupled with the substitution of local varieties with cheap non-traditional cereals that became prevalent on the markets. For example, communities in semi-arid regions which used to grow local grains varieties of sorghum and millet switched to growing short-season maize varieties. These crops, however, continue to fail due to inadaptability to droughts, high input requirements, which are not always met and seasonal shifts. In predominantly rice consuming countries like Sierra Leone, a similar effect was felt as tastes shifted gradually towards cheap imported Asian rice eventually dominated the market. These shifts in consumption and reductions in strategic stocks as governments embraced structural adjustment policies in the 1980s, exposed Africa to the vagaries of market and weather conditions. The effect of all these factors has been an increase in Africa's vulnerability as its dependency on cereal imports increased. In 2008, over 23 African countries had a cereal import dependency in excess of 50% of total requirements (Annex B).

3.2. Construction of a Vulnerability Index

The continent's increasing dependence on cereal may be assessed by developing a vulnerability index. The vulnerability index forms a basis for developing targeted policies and generating responses that are specific to country groups. Rising food prices have different impacts at the country level, depending on the food market and other structural conditions, notably, supply and demand conditions as well as the structure of the economy in general. In this context, a multi-variable vulnerability index is constructed to measure the differential impact of the crisis.

A country's vulnerability to high food prices is assessed in terms of the country's:

- *Cereal balance;*
- *Ability to pay for food imports;*
- *Degree of urbanization; and*
- *Import dependency.*

Important variables used in the construction of the vulnerability index include the following:

i. Cereal balance is the difference between the sum of production and imports minus exports minus consumption requirement. It translates into the following equation :

   - Cereal Balance (CB) = Availability of cereals, in value terms less requirements,

- Availability is defined as total cereal production plus total cereal imports (contracted or delivered) less cereal exports.
- Requirements are given by the total cereal food plus non food consumption.

ii. Cereal import dependency is the ratio of cereal imports to total cereal consumption:

- Cereal Import Dependency (CID) = Total Cereal Imports/Total Cereal Consumption.

iii. A country's ability to pay is measured by its GDP per capita, current account and fiscal position in 2007 in relation to the size of its import requirements.

- Fiscal Balance (FB) (+ = surplus; - = deficit)
- Current Account Balance (CAB) (+ = surplus; - = deficit)
- Gross Domestic Product (GDP)
- GDP per Capita

iv. Degree of urbanization is defined as the urban population divided by total population.

- Urbanization = Urban Population/ Total Population

Net cereal importers have negative CBs, hence countries with large cereal deficits are considered vulnerable. A country's ability to pay for imports is determined by its GDP level, CAB and FB position. At the first stage, the CB, FB, and CAB are all normalized by GDP to construct three *vulnerability indices (Vi)*;

$$V_{1i} = \frac{CB_i}{GDP_i}; \quad V_{2i} = \frac{FB_i}{GDP_i}; \quad V_{3i} = \frac{CAB_i}{GDP_i} \qquad \text{.....(1)}$$

where *i* is a country subscript. *Vi* lies between 1 and -1. In the case of the CB/GDP ratio, countries with positive values need virtually no imports of cereals (although they may have to imports cereals not produced locally such as wheat) and those with negative values require cereal imports. Higher cereal deficits imply a greater sacrifice on the part of the country to meet its cereal requirements. With respect to CAB and FB to GDP ratio, countries with surplus positions face no difficulty in paying for cereal import requirements; those with higher current account and fiscal deficits face relatively challenging conditions.

The next input variable to be considered is urbanization. This is because urban populations are generally net food buyers, implying that rising food prices disproportionately affect the position of the urban poor. Thus, the burden faced by governments as a result of rising food prices increases with higher levels of urbanization. Consequently, an urban-weighted measure of vulnerability capturing the

interaction between cereal balances and urbanization is constructed.

$$UW_{1i}V = V_{1i}*(1+\delta_i);\ UW_{2i}V = V_{2i}*(1+\delta_i);$$
$$UW_{3i}V = V_{3i}*(1+\delta_i).....(2)$$

Given an initial vulnerability index *Vi, this normalization adjusts* the country relative vulnerability by a parameter delta (δ) defined as the ratio of urban population to total population. Therefore, countries with higher levels of urbanization become more vulnerable when compared to those with lower urbanization levels.

Similarly, an *urban-dependency weighted index (UDWVi)* is constructed to take into account differences in import dependency.

$$UDW_{1i}V = UW_{1i}*(1+\alpha_i);\ UDW_{2i}V = UW_{2i}*(1+\alpha_i);$$
$$UDW_{3i}V = UW_{3i}*(1+\alpha_i)..... (3)$$
$$where\ \alpha = 0,...1,$$

As with δ, countries with lower levels of import dependency will have relative vulnerability indices adjusted by a smaller ratio alpha (α) as opposed to those with higher import dependency levels. In the current analysis, the higher a country's cereal import dependency, the higher is its vulnerability to rising cereal prices.

Finally, *country relative wellbeing*, as measured by the GDP per capita, is also taken into account. This last step involves normalization of the *UDWVi* by GDP per capita.

$$PAV_i^{\lambda} = \left[\frac{CB_i}{GDP_i}(1+\delta)(1+\alpha)\right] \Big/ \frac{GDP_i}{POP_i}$$

$$= \frac{CB_i * POP_i}{(GDP_i)^2}(1+\delta))(1+\alpha)..... (4)$$

The result from this normalization is that vulnerability increases at lower levels of per capita income and falls as per capita income increases, everything else constant. While it is noted that poverty rates could have been a better measure compared to GDP per capita, poverty data are not available for all countries for the relevant period. In addition, a longer period could have been used to take into account long-term food vulnerability(4) .

3.3 Results of the Vulnerability Assessment

Based on the results, countries were classified into four quartiles of relative vulnerability as follows: very high vulnerability, high vulnerability, moderate and low vulnerability. Based on this categorization, the five most vulnerable countries in the

(4)In particular, some countries experience recurrent famines and may react by increasing food imports. This is captured by our index only if the famine occurred in recent times and is still affecting food trade.

First Quartile are Liberia, Zimbabwe, Guinea-Bissau, Eritrea and The Gambia (Annex C and Table 1). In all these cases, the factors that categorize them into the high vulnerability group are related to the constrained ability to pay for the required imports. For each of these four countries, the share of GDP required to fill the cereal shortage, via imports, ranges between 5% and 8%, reflecting an import bill of 43 to 69 million US dollars. For The Gambia, Liberia, and Djibouti, the situation is further exacerbated by an above average degree of urbanization of 56%, 59% and 87%, respectively. Furthermore, these countries have high import dependency. Eight other countries belong to this category of very highly vulnerable countries: The Congo (DRC), Djibouti, Sao Tome and Principe, Burundi, Togo, Niger, Mauritania and Sierra Leone.

The Second Quartile comprises countries considered as highly vulnerable with regards to rising cereal prices, but not at such a level as the countries in the first quartile (Annex C). While Ghana, for instance, only has localized food shortages, the high cost of transportation and its relatively weak fiscal position makes it highly vulnerable. Its low urbanization level means a larger part of its population lives in the countryside, thus compounding the problem as transportation costs increase. Côte d'Ivoire, Rwanda, Republic of Congo, Kenya and Nigeria are ranked 9th and lower in this quartile. These countries have large proportions of their populations being poor, hence lower per capita incomes. Consequently, they have lower abilities to pay, especially at the household level.

The countries shown in the Third Quartile are considered as moderately vulnerable. Benin, the Central African Republic, Lesotho and Uganda are the top four in this group. Except for Lesotho, with a positive current account position, the other three countries need to allocate more than 3% of their GDP to import cereals while they already have negative current account positions. Algeria, Libya and Tunisia are in this category because of their relatively high degrees of urbanization. Of these three, only Tunisia has a negative current account balance.

The Fourth Quartile represents the group of countries with a low level of vulnerability. Chad, Gabon, Angola and Equatorial Guinea are all oil producers and have healthy foreign currency reserves. The appearance of Ethiopia in this group is somewhat unexpected. Although the country has a very low import dependency ratio of only 1%, localized high food shortages exist, though requirements could be met from internal supplies given the good harvests. Redistribution of food is largely in the hands of donor agencies. Despite its weak current account balance (-10% of the GDP), the country has a low

urbanization rate of only 17%. On the other hand, Malawi, Madagascar and South Africa are net exporters of some cereals. They are therefore classified as countries with low vulnerability.

Given their relatively weaker position, fragile states received special consideration in the analysis. This is because they have weak production capacity and a number of them are emerging from conflicts which severely damaged their economies and weakened their institutions. Fragile states are thus less able to cushion their populations from rising food prices, as they lack adequate safety nets. Hence fragile states appear in the high vulnerability category. As reported in Table 1, eight out of the

Table 1: Country Classification of Vulnerability

VULNERABILITY GROUP			
1st Quartile	**2nd Quartile**	**3rd Quartile**	**4th Quartile**
1) Liberia	1) Ghana	1) Benin	1) Chad
2) Zimbabwe	2) Comoros	2) Central African Republic	2) Gabon
3) Guinea-Bissau	3) Senegal	3) Lesotho	3) Ethiopia*
4) Eritrea	4) Mozambique	4) Uganda	4) Seychelles
5) The Gambia	5) Cape Verde	5) Sudan	5) Angola
6) Congo (DRC)	6) Morocco	6) Egypt	6) South Africa
7) Djibouti	7) Burkina Faso	7) Tunisia	7) Botswana
8) Sao Tome & Principe	8) Cameroon	8) Algeria	8) Equatorial Guinea
9) Burundi	9) Côte d'Ivoire	9) Mauritius	9) Namibia
10) Togo	10) Rwanda	10) Mali	10) Tanzania
11) Niger	11) Congo, Republic	11) Zambia	11) Guinea
12) Mauritania	12) Kenya	12) Swaziland	12) Malawi
13) Sierra Leone	13) Nigeria	13) Libya	13) Madagascar

Source: African Development Bank (2008)
Note: Somalia is not included because of lack of data.
* Although Ethiopia receives substantial amounts of food aid, its national food balance is positive. The country faces a problem of unbalanced geographical distribution of food production, which is not captured by the index used to measure food vulnerability.

nine Regional Member Countries of the Bank classified as fragile (Burundi, Central African Republic, Côte d'Ivoire, Comoros, Guinea Bissau, Liberia, Sierra Leone and Togo) fall in the first and second quartiles. Given the need to better target scarce resources with the aim of achieving the best outcomes, it appears that fragile states need special treatment in tackling high food prices. For these reasons, Table 2 is amended to isolate fragile states yielding five groups.

4. Implications of Food Price Trends

4.1 Social Implications

The socio-economic impacts of rising food prices vary according to the level of income. It is estimated that if food prices rise by one-third, they will reduce living standards by about 3% in rich countries compared to over 20% in poor countries.

Table 2: Adjusted Classification of Vulnerability

VULNERABILITY GROUP				
Very Highly Vulnerable	**Highly Vulnerable**	**Moderately Vulnerable**	**Lowly Vulnerable**	**Fragile States**
1) Zimbabwe	1) Ghana	1) Benin	1) Chad	1) Liberia
2) Eritrea	2) Senegal	2) Lesotho	2) Gabon	2) Congo (DRC)
3) The Gambia	3) Mozambique	3) Uganda	3) Ethiopia	3) Guinea-Bissau
4) Djibouti	4) Cape Verde	4) Sudan	4) Seychelles	4) Burundi
5) Sao Tome & Principe	5) Morocco	5) Egypt	5) Angola	5) Togo
6) Niger	6) Burkina Faso	6) Tunisia	6) South Africa	6) Sierra Leone
7) Mauritania	7) Cameroon	7) Algeria	7) Botswana	7) Comoros
	8) Rwanda	8) Mauritius	8) Equatorial Guinea	8) Côte d'Ivoire
	9) Congo, Republic	9) Mali	9) Namibia	9) Central African Republic
	10) Kenya	10) Zambia	10) Tanzania	
	11) Nigeria	11) Swaziland	11) Guinea	
		12) Libya	12) Malawi	
			13) Madagascar	* Somalia

Source: African Development Bank (2008)
* Somalia is not listed as a fragile state in ADF/BD/WP/2008/10 but included as a non-ranked country.

Poverty is still highest in Africa compared to other regions. Therefore, rising food prices have serious implications for the poor and food-insecure people in Africa. This is especially true for urban consumers who are net food consumers. As a consequence of rising food prices, households across Africa have had to reduce their food intakes. Food price-related riots were observed in countries such as Burkina Faso, Cameroon and Niger (IFAD, 2009).

In addition, as the poor allocate more income to food, other expenditures on education and health are reduced. Moreover, the population's ability to save is reduced. These reduced expenditures may further be manifested later in the form of increased disease incidences and lower education levels, therefore reinforcing the poverty cycle. Further, during hardships, girls have a higher probability of being taken out of school, compared to boys, which undermines the progress towards gender equality.

In contrast, in rural areas, farmers that are net food producers can benefit from rising food prices (IFAD, 2009). At the local level, two kinds of responses to high food prices were recently observed in production systems. On the one hand, a growing number of poor farmers in some countries increased their food crop production for home consumption and storage, shifting away from market-oriented production. Under this shift, the production systems apply lower levels of purchased inputs, resulting in lower output levels. This situation was notably observed in Senegal, Congo, Mozambique and Nigeria. On the other hand, an increasing number of better-off farmers were able to take advantage of opportunities generated by high food prices to move from subsistence production towards high value crop production (maize, wheat, rice). This situation emerged in countries where opportunities are favorable, such as Kenya and Uganda, characterized by small holding sizes and market reliability (von Braun, 2008).

These trends create an opportunity for agriculture to find its way back on the development agenda in several countries. High food prices have generated positive incentives for policy-makers, farmers and investors to increase agricultural productivity. On the other hand, price volatility constitutes an obstacle for long-term planning in food- importing countries. Recent downward food prices may severely impact farmers who expanded production, resulting therefore in income losses and even financial distress (defaulting on debt) . In addition, with the current global credit crunch, farmers might also have to scale down their planned investment as lines of credit dry up (von Braun, 2008).

4.2 Implications for Regional Trade and Foreign Investments

The current food price crisis offers an opportunity to promote regional integration and trade liberalization. It has already been noted that food price increases vary across countries due to a number of reasons. The different levels of food prices between neighbouring countries have, in some instances, presented a challenge for governments. For example, large differences in food prices are observed between Nigeria and Niger, between Zimbabwe and Botswana, Zambia and Angola, Ethiopia and Somalia, and indeed among many other African countries. Government responses to these emerging challenges have varied considerably among countries. Food shortages forced some governments to ban exports of staples and other food products. This response worsened the disparity in prices among neighbouring countries. These bans are ineffective and always result in the smuggling of food products between neighbouring countries, and it often leads to higher consumer prices.

Despite this reality, regional food security has always played second fiddle to national food security. Responses at the national level alone may not be effective as they result in higher prices. In this context, regional food security is not only a means to reduce consumer prices, but also an avenue to help promote social harmony among communities in border locations. For example, clashes are being reported between bordering communities and informal sugar, rice and dried fish traders at the Zimbabwe-Mozambique border. Moreover, price differences across borders encourage corruption in customs services.

4.3 Implications for Policies

As a response to the global food crisis, African governments have moved to dampen price increases and improve food supply. Actions from major world cereal exporters that include export bans and import restrictions (e.g. Senegal's refusal to accept food aid arguing that food aid is negatively affecting domestic agriculture) have not helped the situation. Such actions have led to speculation and major disruptions of international markets. Though some of these countries eventually lifted export bans, the damage had already been done, as it caused panic on the markets resulting in speculation.

African countries have generally followed three major policy responses: i) demand-side, ii) supply-side and iii) trade-oriented policies. Given the large share of food in household expenditures, food price increases also have a higher impact on inflation, to which policy-makers have responded through higher monetary policy, mainly interest rate adjustments. These measures, most of which reduce or contract revenue flows of the institution's RMCs have serious fiscal implications, and may lead to macro-economic problems. A

Box 1: Malawi's Approach to Food Shortages

Malawi has a land area of 9.43m hectares of which only 32% is suitable for rain-fed agriculture, but most of the soil needs fertilizers for agricultural production. Given its per capita income of only USD 170 per year, most smallholder farmers are unable to purchase agricultural inputs. The agricultural sector accounts for approximately 40% of national income and employs more than 80% of the total labor force. The share of recurrent government expenditure in agriculture fell from 6-7% in early 1990s to 3-5% during the late 1990s. The Malawian government is committed to poverty reduction through the empowerment of the poor and this is being implemented within the context of Vision 2020.

Malawi is still listed among net importers of petroleum and major grains, with high levels of chronic hunger, by the United Nations Food and Agriculture Organization. Acute maize shortages in 2005 (45% deficit), were described, in August of that year, by the United Nations as a humanitarian crisis. The shortages were considered to be a result of poor weather, strategic grain reserve sales, long-term deterioration in rural incomes, price fixing and smuggling. Following this, the government introduced a subsidized input-supply program at a cost of USD 60 million that benefited one million smallholder farmers. Each farmer got seeds and fertilizer, enabling then to plant one acre of maize, the primary target, and similar inputs to cash crops like tobacco. The program was described by some as "misguided" as the markets were better placed to deal with the situation. To others, the program was saddled with implementation problems (poor planning, distribution system and fraud and corruption).

Despite the early criticisms, Malawi has managed to produce maize surpluses for two consecutive years (0.5 million in 2005/06 and 1.3 million metric tones in 2006/07). Donor support towards the program is increasing and its implementation is being refined to make it more targeted and effective.

To fight against the soaring food crisis the government took a series of policy measures. First in April 2008, maize exports were banned (except for the residual contract amounts for Zimbabwe). Second in August 2008, maize private trading was banned and put under the control of Agriculture Development and Marketing Corporation. Through this agency, the government fixed buying and selling prices. Third, to stimulate production, the government agreed in November 2008 to continue the subsidization of agricultural inputs for the coming agricultural season.

Source: Adapted from FAO; UNDP 2008

summary of these measures is presented in Annex D. Malawi's approach to food shortages is highlighted in Box 1. For instance, reducing taxes and increasing subsidies has a negative impact on fiscal balances, which may imply future costs to the countries, to be financed either through increases in taxes or external and internal borrowing. High inflation may undermine the gains made in many of these countries in reducing poverty over the past decade. In particular, countries run the risk of policy reversal, thereby eroding the reform gains acquired so far.

Attempts to face the food crisis through subsidies have been fiscally costly. Food subsidies in Egypt, which are criticized for not being properly targeted, cost the government USD 2.3 billion for fiscal year 2007/08 (American Chamber of Commerce in Egypt, 2008). Malawi's input supply scheme costs the government an estimated USD 186 million, tripling the previous year's figure of USD62 million for 2005/06. The program was commended for revitalizing agriculture and improving the food security situation in the country (AfricaFocus Bulletin, 2009).

While it is important that countries seek to minimize the short-run impact of high food prices, it is critical to ensure that the impact of such intervention on the fiscal balance is limited and only short-lived. Measures should be put in place to ensure that government revenues increase while allowing some exchange rate adjustments to foster expenditure switching. Any measures that cause distortions should be discouraged. Instead efforts should be deployed to stimulate a positive agricultural sector supply response to rising food prices. In addition, well targeted safety-nets are required to cushion the vulnerable groups. Cash transfers, food-for-work programs and targeted food packs/subsidies are some such measures that can alleviate the burden of rising food prices.

The high pressure on natural resources, combined with the loss of confidence on markets created by high food prices, have also renewed attention on foreign direct investment in agriculture. To secure their food supply, capital-rich countries facing natural resource constraints are investing in African countries to secure reliable sources of food. For instance, Egypt invested in the agricultural sectors in Libya, Madagascar and Sudan in 2008 while China invested in numerous African countries. These investment flows will directly contribute to improve agriculture and the agro-industry in the targeted countries and indirectly contribute to value-addition activities. However, recipient countries need to ensure that appropriate clauses are included in the contracts governing these investments, paying particular attention to the respect

of customary property rights and trade policy rules, supporting the participation of local producers and ensuring that food security is preserved in the recipient country (von Braun, 2008).

5. The African Development Bank's Response

While acknowledging the short-term impact of rising food prices in Africa, the African Development Bank is of the view that there are opportunities associated with current trends. By increasing the value of agricultural assets, high food prices have the potential of stimulating investment into the sector. An enabling policy environment, however, is required. The Bank, has capitalized on its internal capacity and past experience in the sector to address critical constraints and accelerate support to agriculture. Within the context of the African Food Crisis Response (AFCR) framework, the African Development Bank adopted short-term and medium-to-long term responses. In this regard, the vulnerability index described above was instrumental to the prioritization of the Bank's response to the crisis. These responses sought to enhance the Bank's contribution in areas where it has some comparative advantage. Some of these responses are summarized below.

5.1 Short-Term Responses

In the short term, the African Development Bank pursued specific and targeted responses aimed at cushioning the effects on the poor, minimizing macro-economic instability and enhancing supply responses in its RMCs. The Bank's role in providing sound policy advice was also emphasized. In its quest to stabilize food prices, the African Development Bank granted budget and balance of payments support to eligible RMCs, as expressed in the Bank's response to the Food Crisis paper. The Bank utilized resources from its surplus account to support targeted projects and accelerate disbursements and realignment of existing agriculture and non-agricultural portfolios to address food crisis issues. Accelerated disbursement of resources to approved projects and realignment of existing agriculture portfolios, however, did not imply additional resource requirements. Such realignments mainly targeted improving input supply, and increasing access to and utilization of improved seeds such as the NERICA rice seeds. Through policy advice, the Bank engaged its RMCs in dialogue with a view to exploring viable policy options for macro-economic stability, while protecting vulnerable groups. In these efforts, the Bank is cognizant of the need for a differentiated approach in its response depending on the vulnerability of its RMCs and the need to ensure the continent's future food security.

As reported by the Bank's Agriculture and Agro-Industry Department, the Bank initially identified 75 projects, including 42 agricultural projects, in 23 countries(5) as candidates for budget realignment to address the crisis. By January 2009, 26 agricultural and 22 non-agricultural projects had been realigned. This resulted in a budget re-allocation of UA 86.43 million to address productivity issues. Furthermore, 12 operations had been identified for budget support operations to alleviate some of the pressure on countries' macro-economic frameworks and help free up resources for immediate responses to the food crisis. In addition, the Bank allocated UA 20 million from its Surplus Account to assist 11 countries(6) affected by increased food prices. Finally, the Bank has made a commitment to enable an expansion of the total area under NERICA cultivation over the next two years, based on its on-going multinational NERICA dissemination project in 7 West African countries(7).

The Bank has also promptly responded by offering indirect support through other instruments. In particular, countries affected will benefit from budget support earmarked for the purchase of inputs to increase production levels since access to inputs is widely recognized as one of the key constraints on productivity in Africa. The use of inputs is affected by other constraints, including low irrigation capacity, mechanization, inadequate infrastructure, and missing or imperfect markets. Most of these issues will be addressed during the implementation of Medium-to-Long Term Responses.

5.2 Medium-to-Long Term Responses

The African Development Bank's medium-to-long term responses were formulated within the context of the Bank's Medium Term Strategy. This strategy recognizes the importance of incentives to transform and revitalize the agricultural sector. Support to the smallholder sector, as in Malawi, and women's empowerment, may play a big role in poverty reduction efforts. Moreover, access and use of new innovations in agriculture require increased flows of investment into the sector to enhance the continent's capacity to respond to trade opportunities and enhance its ability to adapt to climate change. Furthermore, the Bank's strategy also acknowledges the importance of a cross-sectoral approach that addresses some of the

(5) Angola, Benin, Burkina Faso, Chad, Djibouti, Ethiopia, Gambia, Ghana, Guinea Bissau, Guinea, Kenya, Madagascar, Malawi, Mali, Mauritania, Mozambique, Niger, Nigeria, RDC, Rwanda, Senegal, Sierra Leone and Zambia.
(6) Burundi, Central African Republic, Comoros, Djibouti, Eritrea, Gambia, Libera, Mauritania, Niger, Sao Tome and Togo.
(7) Benin, Gambia, Ghana, Guinea, Mali, Nigeria and Sierra Leone

constraints to supply response. Finally, the Bank is aware of the critical role of building partnerships and harmonization of actions to improve the effectiveness of interventions.

In the medium term, the Bank will strengthen internal capacity to respond more successfully to crises in Africa. A Crisis Response Facility (CRF) is being discussed so that the Bank can provide timely responses to emergency situations like global price shocks and regional trade disruptions due to conflict. Such a facility would allow the Bank to provide quick disbursing compensatory financial assistance to affected RMCs on concessionary terms using existing Bank instruments. Moreover, following the endorsement of the African Fertilizer Financing Mechanism (AFFM) by the Bank's Board of Governors in March 2008, the institution moved to utilize the resources available to catalyze private sector investment in the manufacturing, procurement and distribution of fertilizer in its RMCs. Access to fertilizers by smallholder farmers, especially women, will be supported. The Bank is actively involved in the coordination of processes under this facility.

In the long-term, measures that ensure food security and increased participation by the poor in income-generating activities are key. In this context, it is important to intensify the development of new seed varieties of staple foods and their dissemination, improve quality control and access to financing, especially by smallholder farmers. Furthermore, the Bank will scale up efforts in rural infrastructure development and management of water resources. This will include measures to increase storage facilities, improve modalities of access and efficiency in water usage. In addition, post-harvest losses will need to be reduced through the support to improve and increase the capacity of storage facilities as well as human capacity building in post-harvest management. Central in these processes is the importance of enhancing knowledge and management abilities of farmers and institutions involved in agriculture. Agricultural research, science and technology will, therefore, be critical in promoting a commercial approach to agriculture on the continent. Also important is the creation of an enabling environment that encourages the private sector to play an increasing role in agriculture, thereby stimulating resource flows into agriculture.

6. CONCLUSION

Recent food price hikes have caused hardship for the poor on the continent and elsewhere. Millions of Africans have been affected and there is the risk of many people being dragged into poverty and offsetting the modest gains that have been made towards achieving the MDGs.

Similarly, rising food and fuel prices are threatening a return to the high levels of inflation that the continent had painfully managed to control in recent years.

Many factors are responsible for this price hkes and appropriate policy responses are urgently needed to ensure that the continent is adequately equipped to cope with the negative effects of high food prices, while taking advantage of any opportunities that high food prices may present. Most African countries remain agriculture-based and may be able to benefit from high food prices, given the substantial unexploited agricultural potential. Real food prices are expected to remain high in the short-to-medium term, and thus could stimulate increased flows of investment in agriculture. Carefully targeted programs aimed at increasing the productivity of the smallholder sector could help millions of Africans to overcome extreme poverty, through increased production, value addition and market orientation.,In collaboration with other development partners, the Bank is committed to playing a leading role in helping African countries design and implement strategies for hedging against food price shocks and reaping the benefits of higher producer prices. In this respect, the Vulnerability Index described in this paper, will help development partners to better target those who need assistance the most to deal with food supply shocks.

Annex A: Food Consumption Shares (% of total expenditure)

Country	Cereals share in total calorie intake	Household Food Expenditure Shares		Household Cereal Expenditure Shares		
		Food	Cereals	Wheat	Rice	Coarse Grains
	(I)	(II)	(III)	(IV)	(V)	(VI)
Algeria*	57	–	–	78.2	1.1	20.7
Angola	32	43.9	12.6	38.5	19.8	41.7
Benin	36	46.9	18.5	5.2	18.3	76.5
Botswana	51	25.3	7.3	34.8	16.0	49.2
Burkina Faso	75	43.7	15.7	2.2	13.8	83.9
Burundi	16	46.6	13.9	15.1	23.4	61.5
Cameroon	43	44.2	8	15.0	26.5	58.5
Cape Verde	50	30.4	7.2	29.6	44.4	26.0
Central African Republic	22	62.4	12.8	22.9	15.0	62.1
Chad	54	56.2	8.0	7.0	11.6	81.5
Comoros	44	69.2	29.8	13.2	83.3	3.5
Congo, Dem. Rep.	18	62.5	7	27.3	25.5	47.2
Congo, Republic of	30	41.2	8.1	69.9	28.2	1.9
Côte d'Ivoire	41	44.4	6.5	12.7	71.0	16.3
Djibouti	53	37.1	9.3	56.9	40.4	2.7
Egypt	64	44.7	7.3	58.5	14.9	26.6
Equatorial Guinea	15	39.9	7.8	61.4	38.6	0.0
Eritrea*	79	–	–	67.3	2.8	29.9
Ethiopia	79	55.9	26	34.5	0.2	65.4
Gabon	26	38.1	6.9	43.1	47.4	9.5
Gambia	55	41.8	10.6	11.9	45.0	43.2
Ghana	28	50.6	7.8	20.4	27.9	51.7
Guinea	44	44.6	25.5	8.8	65.7	25.5
Guinea-Bissau	58	52.9	13.6	6.5	67.0	26.5
Kenya	50	38.6	9.9	30.0	10.6	59.4
Lesotho	78	38.7	16.9	51.2	6.5	42.2
Liberia	36	26.8	7.5	16.8	81.2	2.1
Libya*	47	–	–	88.1	7.5	4.4
Madagascar	53	61.5	35.5	4.1	89.3	6.6
Malawi	58	23.3	10.4	4.9	4.6	90.4
Mali	73	48.6	21.5	5.9	37.9	56.3
Mauritania	54	65.8	17	65.8	20.1	14.1
Mauritius	45	26.3	5.3	49.7	30.4	19.9
Morocco	62	38.9	7.5	74.7	0.3	25.0
Mozambique	43	62.7	23.8	21.8	25.7	52.6
Namibia	64	32.4	7.7	40.0	0.0	60.0
Niger	69	47.9	21.8	1.8	9.5	88.7
Nigeria	46	58.1	19.1	15.0	22.0	63.0
Rwanda	17	45	6.7	9.8	25.5	64.7
Sao Tome & Principe	33	54.6	15.8	46.1	36.2	17.7
Senegal	61	53.1	14.4	22.0	48.0	30.1
Seychelles*	34	–	–	18.6	51.3	30.0
Sierra Leone	54	44.6	15	11.0	80.2	8.8
Somalia*	34	–	–	39.5	21.4	39.2
South Africa	54	20.2	3.3	32.6	9.0	58.4
Sudan	56	55.5	10.4	41.0	1.6	57.4
Swaziland	44	44.5	11.6	34.9	11.6	53.5
Tanzania	51	69.6	25.7	12.1	27.8	60.1
Togo	47	50.7	13.7	10.7	16.8	72.5
Tunisia	51	29.1	4.8	73.3	0.6	26.1
Uganda	21	37.2	6.9	7.0	13.1	79.9
Zambia	65	12.3	3.5	19.8	4.2	76.0
Zimbabwe	58	46.3	21.6	24.9	1.8	73.2
Africa	–	**39.9**	**9.9**	**35.9**	**20.7**	**43.4**

Source: AfDB Statistics Department, ICP Data (2005) and FAO (2008)

* Countries did not participate in the ICP

Annex B: Cereal Balance (Values in million) (2007/08)

Country	Cereal Production	Cereal imports (contracted or delivered)	Possible Stock Draw Down	Cereal Exports	Cereal Availability	Consumption (Non-Food)	Consumption (Food)	Requirements	Cereal Balance	GDP (2007)	Anticipated imports[3]	Cereal Balance/GDP	Cereal Imports Dependency[2]	Current Account Balance/GDP[2]	Fiscal Balance/GDP[2]
	USD Million					USD Million				USD Million		Percentage		Percentage	
Algeria	1,462	924	139	24	2,501	2,966	869	3,835	-1,334	134,517	2,499	-1.0	65	21.6	11.4
Angola	188	194	8	28	361	432	32	464	-103	60,852	267	-0.2	58	17.7	10.0
Benin	278	22	5	77	228	212	63	275	-47	5,538	80	-0.9	29	-5.5	-2.0
Botswana	7	80	1	0	88	97	1	98	-11	10,706	94	-0.1	96	21.0	7.1
Burkina Faso	824	2	5	80	752	710	131	841	-89	7,135	98	-1.3	12	-13.9	-6.0
Burundi	81	10	-	0	90	97	11	108	-18	946	24	-1.9	23	-14.2	0.7
Cameroon	416	22	28	49	417	545	116	660	-244	21,509	281	-1.1	43	0.2	4.5
Cape Verde	1	1	4	0	6	29	0	30	-23	1,397	21	-1.7	72	-11.5	-2.3
Central African Rep.	51	5	1	0	57	59	5	64	-7	1,732	14	-0.4	21	-3.4	-2.7
Chad	477	2	2	70	411	320	103	423	-12	6,509	23	-0.2	5	-9.9	0.8
Comoros	8	11	1	1	19	23	1	24	-5	466	18	-1.2	73	-3.7	-2.0
Congo, Dem. Rep.	409	1	0	1	409	544	72	617	-208	10,589	237	-2.0	36	-6.9	2.2
Congo, Republic of	2	6	3	0	11	129	5	134	-123	8,243	126	-1.5	94	16.8	15.1
Côte d'Ivoire	665	122	6	46	747	849	88	937	-190	19,810	513	-1.0	55	4.1	0.3
Djibouti	0	1	2	14	-11	31	0	31	-43	833	27	-5.1	85	-14.5	-1.6
Egypt	7,508	1,186	414	481	8,628	7,819	2,626	10,444	-1,817	128,512	2,966	-1.4	28	2.1	-5.7
Equatorial Guinea	0	3	1	2	2	9	0	9	-7	9,731	10	-0.1	109	-2.4	22.8
Eritrea	53	34	0	0	86	162	9	171	-85	1,084	98	-7.9	57	-3.7	-18.1
Ethiopia	4,186	0	81	186	4,082	3,256	756	4,012	69	15,069	22	0.5	1	-10.2	-3.1
Gabon	7	6	2	0	15	61	17	78	-63	10,652	70	-0.6	89	19.8	9.6
Gambia	51	14	4	17	51	80	10	90	-39	640	53	-6.1	56	-21.8	1.8
Ghana	403	32	85	79	441	580	81	661	-220	14,830	268	-1.5	41	-6.9	-8.2
Guinea	827	13	0	72	768	471	274	745	23	4,743	200	0.5	27	-8.7	1.0
Guinea-Bissau	63	9	5	6	72	77	10	86	-14	357	34	-4.0	40	-12.7	-17.3
Kenya	778	95	150	4	1,019	1,166	111	1,277	-257	29,860	290	-0.9	23	-1.7	-1.7
Lesotho	17	60	2	0	79	86	1	87	-8	1,634	63	-0.5	72	1.6	7.7
Liberia	68	18	11	1	96	143	11	154	-58	716	71	-8.2	46	-20.1	1.5
Libya	52	229	0	0	280	401	325	727	-446	64,134	675	-0.7	93	28.3	40.2
Madagascar	1,660	95	0	3	1,753	1,176	79	1,255	498	7,314	106	6.8	8	-12.5	-3.5
Malawi	806	35	2	122	721	483	159	642	79	2,580	35	3.0	6	-4.0	-1.5
Mali	965	4	27	34	961	796	154	950	11	7,113	120	0.2	13	-5.5	-1.0
Mauritania	49	26	18	11	81	131	40	171	-90	2,798	117	-3.2	68	-6.8	-2.8
Mauritius	0	19	0	16	3	73	20	93	-91	7,400	109	-1.2	117	-5.4	-4.3
Morocco	834	518	735	20	2,067	2,641	832	3,473	-1,406	73,374	1,380	-1.9	40	3.1	-3.4
Mozambique	507	217	16	32	708	671	97	768	-61	7,663	281	-0.8	37	-10.2	-5.1
Namibia	27	49	5	0	80	71	3	74	7	7,312	50	0.1	68	15.5	1.9
Niger	823	4	35	11	851	761	164	924	-73	4,280	78	-1.7	8	-7.1	-0.8
Nigeria	6,651	84	290	151	6,874	6,323	1,798	8,121	-1,247	124,000	1,996	-1.0	25	4.0	5.6
Rwanda	101	20	0	0	121	122	21	142	-21	2,822	45	-0.8	32	-5.8	-0.4
Sao Tome & Principe	1	1	0	0	2	6	0	6	-4	90	4	-4.1	69	-64.9	-11.9
Senegal	288	98	11	1	395	532	55	587	-192	10,946	350	-1.8	60	-8.3	-5.5
Seychelles	0	1	0	0	1	3	1	4	-3	706	4	-0.4	100	-30.4	-5.8
Sierra Leone	264	6	0	0	270	249	40	289	-20	1,668	108	-1.2	37	-6.7	-3.4
Somalia	38	1	7	2	45	174	33	206	-161	Notavailable	130	NA	63	Notavailable	
South Africa	2,394	880	251	152	3,373	2,450	1,140	3,589	-216	272,726	1,125	-0.1	31	-6.8	0.8
Sudan	1,337	165	60	43	1,519	1,568	303	1,872	-352	45,725	459	-0.8	25	0.0	-3.8
Swaziland	6	30	3	4	35	45	4	49	-14	2,725	37	-0.5	76	0.2	-2.0
Tanzania	1,404	167	72	106	1,537	1,243	185	1,428	110	14,504	223	0.8	16	-11.8	-4.5
Togo	215	9	2	52	174	181	38	219	-44	2,537	222	-1.8	101	-6.4	-2.5
Tunisia	688	183	32	50	853	870	562	1,432	-579	34,458	543	-1.7	38	-0.5	-3.1
Uganda	594	0	48	75	566	540	60	599	-33	10,968	32	-0.3	5	-3.8	-2.8
Zambia	353	12	21	64	322	295	37	332	-11	11,417	22	-0.1	7	-4.1	-1.8
Zimbabwe	277	147	7	4	428	478	67	545	-117	4,732	169	-2.5	31	-0.9	-24.6
Total Africa	**39,164**	**5,872**	**2,602**	**2,193**	**42,843**	**43,238**	**11,618**	**54,856**	**-12,013**	**1,232,603**	**16,877**	**-1.0**	**31**	**2.2**	**2.8**

Source: AfDB Statistics Department, FAO (2008).
Note: Countries differ with respect to the marketing year, 2007/08 or 2008, depending on data availability, 2008 production data used for Wheat: Botswana, Cameroun, Mauritania, Mozambique, Somalia, Swaziland; Rice: Ethiopia, Gabon, Swaziland, Maize: Djibouti, Mauritius. Products included in the food category are wheat, rice, and coarse grain. It is assumed that coarse grains are mainly composed of maize. Thus, the world price for maize is used to compute the value of coarse grains. Cereal Balance is defined as domestic production plus food imports/contracted or recieved) minus domestic food and non-food consumption, and exports. Accordingly, a negative value represents a deficit, white a positive value represents a surplus.
[1]A value exceeding 100 is due to stock build up, exports and/or re-exports from further processing sectors.
[2]2007, Excluding debt relief.
[3]Anticipated imports are the sum of the cereal balance plus cereal stock shortfails.

Annex C: Indicators of Vulnerability and Country Ranking

						Vulnerability Indices					
	Country	Cerea Balance GDP/	Cereal Dependency	Share of urnan population	2007 GDP per capita	Urban weighted	Dependency weighted	Urban and dependency weighted	Urban and decendency weighted deflated by GDP per capita	Current Account Balance/GDP	Quartile
1	Liberia	-9.69	0.46	0.59	357	-15.42	-14.16	-22.54	-6.31	-20.1	1th
2	Zimbabwe	-2.62	0.31	0.37	188	-3.59	-3.44	-4.70	-2.49	-0.9	1th
3	Guinea-Bissau	-5.50	0.40	0.30	484	-7.13	-7.70	-9.98	-2.06	-12.7	1th
4	Eritrea	-7.87	0.57	0.20	774	-9.48	-12.35	-14.83	-1.92	-3.7	1th
5	Gambia	-6.75	0.59	0.56	1,326	-10.52	-10.69	-16.65	-1.26	-21.8	1th
6	Congo, Dem. Rep.	-1.97	0.38	0.33	309	-2.62	-2.72	-3.03	-1.18	-6.9	1th
7	Djibouti	-5.38	0.85	0.67	2,271	-10.08	-9.94	-18.57	-0.82	-14.5	1th
8	Sao Tome & Principe	-4.53	0.69	0.60	1,565	-7.25	-7.66	-12.25	-0.78	-64.9	1th
9	Burundi	-1.69	0.23	0.10	372	-2.08	-2.32	-2.55	-0.69	-14.2	1th
10	Togo	-1.83	1.01	0.41	306	-2.59	-3.69	-5.21	-0.65	-6.4	1th
11	Niger	-2.53	0.08	0.16	667	-2.94	-2.75	-3.10	-0.48	-7.1	1th
12	Mauritania	-3.86	0.68	0.41	2,008	-5.44	-6.49	-9.15	-0.46	-6.8	1th
13	Sierre Leone	-1.13	0.37	0.38	692	-1.63	-1.62	-2.24	-0.32	-6.7	1th
14	Ghana	-2.06	0.41	0.49	1,426	-3.07	-2.89	-4.31	-0.30	-6.9	2nd
15	Comores	-1.35	0.73	0.28	1,125	-1.72	-2.33	-2.98	-0.27	-3.7	2nd
16	Senegal	-1.85	0.60	0.42	1,685	-2.63	-2.95	-4.20	-0.25	-8.3	2nd
17	Mozambique	-1.00	0.37	0.36	830	-1.36	-1.36	-1.86	-0.22	-10.2	2nd
18	Cape Verde	-1.97	0.72	0.59	3,244	-3.13	-3.39	-5.39	-0.17	-11.5	2nd
19	Morocco	-2.92	0.40	0.56	4,076	-4.54	-4.08	-6.35	-0.16	3.1	2nd
20	Burkina Faso	-1.53	0.12	0.19	1,253	-1.58	-1.48	-1.77	-0.14	-13.9	2nd
21	Cameroun	-1.26	0.43	0.56	2,088	-1.97	-1.80	-2.81	-0.13	0.2	2nd
22	Côte d'Ivoire	-0.99	0.55	0.46	1,716	-1.17	-1.53	-2.27	-0.13	4.1	2nd
23	Rwanda	-0.75	0.32	0.18	899	-0.88	-0.99	-1.16	-0.13	-5.8	2nd
24	Congo Republic of	-1.53	0.94	0.61	3,730	-2.46	-2.97	-4.78	-0.13	16.8	2nd
25	Kenya	-1.36	0.23	0.21	1,699	-1.65	-1.67	-2.03	-0.12	-1.7	2nd
26	Nigeria	-1.24	0.25	0.48	2,035	-1.83	-1.54	-2.28	-0.11	4.0	2nd
27	Benin	-0.95	0.29	0.41	1,541	-1.33	-1.22	-1.72	-0.11	-5.5	2rd
28	Central African Republic	-0.48	0.21	0.38	726	-0.66	-0.58	-0.80	-0.11	-3.4	2rd
29	Lesotho	-0.59	0.72	0.25	1,285	-0.73	-1.01	-1.26	-0.10	1.6	2rd
30	Uganda	-0.73	0.05	0.13	939	-0.83	-0.77	-0.87	-0.09	-3.8	2rd
31	Sudan	-0.90	0.25	0.43	2,172	-1.28	-1.12	-1.60	-0.07	0.0	2rd
32	Egypt	-1.74	0.28	0.43	5,491	-2.48	-2.23	-3.18	-0.06	2.1	2rd
33	Tunisia	-1.77	0.38	0.66	7,473	-2.95	-2.45	-4.06	-0.05	-0.5	2rd
34	Algeria	-1.10	0.65	0.65	6,533	-1.80	-1.81	-2.98	-0.05	21.6	2rd
35	Mauritius	-1.23	1.17	0.42	11,152	-1.75	-2.66	-3.79	-0.03	-5.4	2rd
36	Mali	-0.21	0.13	0.32	1,031	-0.28	-0.24	-0.31	-0.03	-5.5	2rd
37	Zambia	-0.28	0.07	0.35	1,309	-0.37	-0.29	-0.40	-0.03	-4.1	2rd
38	Swaziland	-0.63	0.76	0.25	4,836	-0.79	-1.11	-1.39	-0.03	0.2	2rd
39	Libya	-0.70	0.93	0.77	12,277	-1.23	-1.34	-2.38	-0.02	28.3	2rd
40	Chad	-0.21	0.05	0.26	1,675	-0.27	-0.22	-0.28	-0.02	-9.93	4th
41	Gabon	-0.61	0.89	0.85	14,083	-1.13	-1.16	-2.15	-0.02	19.8	4th
42	Ethiopia	-0.08	0.01	0.17	806	-0.09	-0.08	-0.09	-0.01	-10.2	4th
43	Seychelles	-0.43	1.00	0.54	16,642	-0.67	-0.86	-1.33	-0.01	-30.4	4th
44	Angola	-0.18	0.58	0.56	5,590	-0.28	-0.29	-0.45	-0.01	17.7	4th
45	South Africa	-0.17	0.31	0.60	9,761	-0.27	-0.22	-0.36	0.00	-6.8	4th
46	Botswana	-0.11	0.96	0.59	16,450	-0.17	-0.21	-0.33	0.00	21.0	4th
47	Equatorial Guinea	-0.08	1.09	0.39	12,895	-0.11	-0.16	-0.23	0.00	-2.4	4th
48	Namibia	0.03	0.68	0.36	5,189	0.03	0.04	0.06	0.00	15.5	4th
49	Tanzania	0.26	0.16	0.25	1,256	0.32	0.30	0.37	0.03	-11.8	4th
50	Guinea	0.48	0.27	0.34	1,074	0.64	0.61	0.81	0.08	-8.7	4th
51	Malawi	2.97	0.06	0.18	785	3.51	3.13	3.71	0.47	-4.0	4th
52	Madagascar	6.81	0.08	0.29	1,068	8.80	7.39	9.54	0.89	-12.5	4th
53	Somalia	NA	0.63	0.36	NA	NA	NA	NA	NA	NA	
	African Average	-0.97	0.31	0.39		-1.35	-1.37	-1.77			

Source: African Development Bank, 2008.

Annex D: Policy Measures Taken by Governments

	Consumer oriented							Producer oriented		Trade oriented	
	Tax	Social			Market			Production support	Market management	Import	Export
	Taxes (direct & indirect)	Food assistance	Food subsidies	Safety net & other	Price controls	Release stocks	Food procurement & other	Producer credit & other	Minimum producer prices & other	Import tariffs & other	Quantitative export controls
Algeria			X				X	X	X	X	
Angola								X			
Benin					X		X	X		X	
Burkina Faso	X	X			X			X		X	
Cameroon	X				X	X	X			X	X
Cape Verde	X	X			X					X	
Central African Republic									X		
Congo	X										
D.R Congo					X					X	
Dibouti	X				X			X			
Egypt		X	X	X	X						X
Eritrea			X			X					
Ethipia	x		X		X			x			X
Gambia	X									X	
Ghana								X		X	
Guinea	x							X		X	x
Kenya	X							X		X	X
Liberia		X						x		X	
Libyan Arab Jamahiriya				X	X		X	X		X	
Madagascar	x	x			X	x		X		X	
Malawi								X	X		X
Mauritania							X	X		X	
Morocco		X	X		x					X	
Mozambique										x	
Namibia	X	x									
Niger	x						X	X		X	
Nigeria		X				X	X	X	X	X	
Rwanda					X		X			X	
Senegal	X	X	X		X		X	X	X	X	
Seychelles	x							X			
Sierra Leone	x				x	x		x		X	
South Africa		X						x			
Sudan	X				x						
Togo					X			x			
Tunisia								x	X		
Uganda	X										
United Republic of Tanzania	X		x					X		X	X
Zambia			x		x			X	X		X
Zimbabwe		X								X	
Total	11	10	8	2	9	0	9	18	7	23	8

Source: FAO, 2008b, IMF and AfDB Databases

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