



Improved Global Governance for Hunger Reduction Programme

# IMPLEMENTING CAADP IN A CONTEXT OF HIGH AND VOLATILE FOOD PRICES UNDERLYING FACTORS, POLICY CHALLENGES AND RECOMMENDATIONS

*Joint brief prepared by the Food and Agriculture Organization (FAO) of the United Nations in collaboration with The New Partnership for Africa's Development (NEPAD) Planning and Coordination Agency\**

*Authors: Mulat Demeke, FAO; Mariam Sow Soumare, NEPAD Planning and Coordinating Agency; Lavinia Antonaci, FAO*

\*The brief has been produced under the 'Improved Global Governance for Hunger Reduction' programme which is funded by the European Union and managed by FAO. For further details, please refer to the paper: Demeke, M, Doroudian, A, Morales L, Antonaci, L., 2012. "Understanding High and Volatile Prices in Africa: Causes and Policy Challenges". ESA Working Paper. FAO."

The designations employed and the presentation of material in this document do not imply the expression of any opinion whatsoever on the part of FAO and NEPAD, and EC concerning the legal or development status of any country, territory, city or area or of its authorities, or concerning the delimitation of its frontiers or boundaries. The views expressed in this documents are those of the author(s) and do not necessarily reflect the views of FAO, NEPAD and the funding agencies.

## 1. Background

The Comprehensive Africa Agriculture Development Program (CAADP) is a strategic framework run by the African Union's New Partnership for Africa's Development (NEPAD). The programme aims to guide agriculture-led, broad-based development in Africa, and is geared towards poverty and food insecurity alleviation. It recommends a six percent annual growth of the agriculture sector in general and of agricultural productivity in particular. To achieve this, African heads of states have made the commitment to invest 10 percent of their national budget in the agriculture sector. Donor partners and private sector are also encouraged to invest more in Africa agriculture.

To date, 30 countries around the continent have signed the national CAADP compacts and more than 20 have designed investment plans and are about to start implementation. CAADP Pillar 3 intends to promote tools and policies for building resilience of the African population in particular for the most vulnerable groups of society. However, recurrent food and fuel crises resulting in increased risks of production, market and institution failure are among the major impediments to increasing productivity.

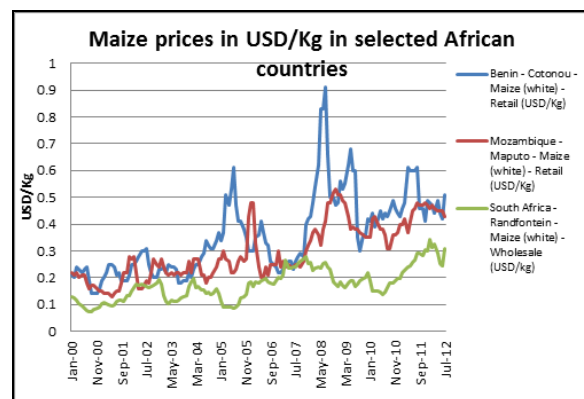
The objective of this brief is to examine the challenges faced by countries and regional economic communities in implementing CAADP in a context of high and volatile food prices, and to draw policy recommendations for high level decision makers. It draws on latest evidences to address the following questions:

- i. What are the features and patterns of recent price movements?
- ii. What are the main causes and key drivers?
- iii. What are the implications for the welfare of consumers, incentives of producers, growth and stability of the economy?
- iv. What are the challenges and options for policy makers?

## 2. Staple food price volatilities and levels in Africa

In Africa, spiking and volatile food prices have created uncertainty and risks for producers, traders and processors, and resulted in increased food insecurity for consumers. Price variability becomes a concern when they are large and food prices have spiked several times in the last five or six years. For instance, in Benin, the price of maize has suddenly increased and declined almost every year since 2005. In Mozambique, price spikes have increased over the same period. By contrast, sudden price movements are less pronounced in South Africa where the market is more developed and production is more commercialized (Figure 1).

Figure 1: Maize price in USD/kg

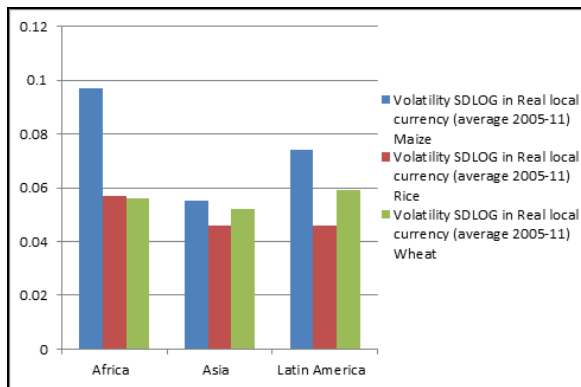


Source: GIEWS/ FAO database

Price movements generally exhibit price volatilities and price levels. Volatility refers to sudden variations of prices from one period to another and is measured using different techniques. Applying one of the most appropriate methods<sup>1</sup> to a group of countries from Africa, Asia and Latin America and Caribbean (LAC), it was revealed that average white maize price volatility is higher in Africa (0.097) than in LAC (0.079) or Asia (0.055) (2005-2011). Price volatilities of the largely imported staples, wheat and rice, were also found to be higher in Africa (Figure 2).

<sup>1</sup> The coefficient of variation (CV), which is the standard deviation of a group of values divided by their mean, is the simplest but gives misleading results if there are strong trends in the data. A better alternative is the standard deviation of changes in the logarithm of prices (SDLOG) which is less affected by strong trends over time. Volatility is thus measured using the SDLOG.

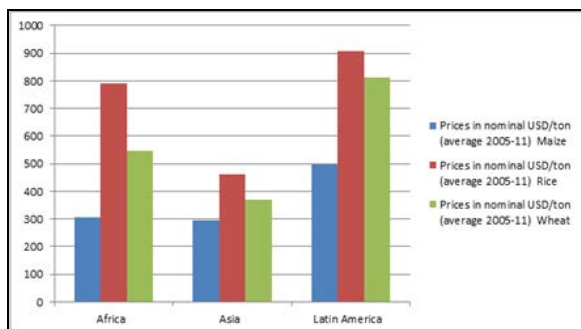
Figure 2: Price volatility of staple crops (SDLOG)



Source: GIEWS/FAO database

Price levels refer to a picture of the price of any commodity at a given time or a range of time. Simple, average nominal prices of maize, rice and wheat, as measured in US dollars (mainly wholesale prices), are used to compare price levels. The results showed that prices are higher in Africa than in Asia but lower than in some of the LAC countries (Figure 3).<sup>2</sup> Lower and more stable prices in Asia can be attributed to productivity-led decline in real food prices (due to the Asian Green Revolution) (Hazell, 2009) and price stabilization policies (Dawe, 2008). Staple food prices are highest in LAC but the higher per capita incomes of the region have made their impact to be less felt than in Africa.

Figure 3: Price levels of staple (nominal US\$)



Source: GIEWS/FAO database

<sup>2</sup> The sample included 15 countries from Africa (Benin, Burkina Faso, Cameroon, Cape V., Chad, Kenya, Malawi, Niger, Nigeria, Mozambique, Ethiopia, Rwanda, Tanzania, Uganda and Zambia), 12 from LAC (Costa R., Dominican R., El Salvador, Guatemala, Haiti, Honduras, Nicaragua, Panama, Bolivia, Brazil, Colombia and Peru) and two from Asia (Philippines and Thailand) in the case of Maize. The corresponding number of countries for rice was 13, nine and 13, and five, five and eight for wheat. Major exporting countries such as Argentina (for maize and wheat) and Thailand (rice) are excluded.

Comparison between the crops showed that rice and wheat have lower price volatility than the mostly domestically produced maize. However, imported staples are more expensive and require foreign exchange (which is often scarce) to be available. Moreover, rice and wheat prices in the local market increased at a faster rate (at the peak of the crisis, 2008/09), than maize. Minot (2010) also found that the increases in the prices of traditional staples such as cassava, plantains and beans were much smaller than for rice or wheat.

### 3. Key structural drivers of higher and more volatile prices

In developed countries, increasing biofuel, feedstock demand, depreciation of the US dollar, the historical low level of food stocks, and the abandonment of supply and stock policies were the main drivers of high food prices. In Africa, a widening gap between variable domestic cereal supply and steadily increasing demand, are the dominant causes of high and volatile prices.

In sub-Saharan Africa (SSA), although domestic prices of grains are affected by international prices as well as high and volatile oil prices, local supply and demand factors have had a dominant effect, especially on domestically produced cereals (Minot 2010; Cornia et al. 2012). Three key problems in particular stand out as the most important drivers of higher and more volatile food prices in the region: (i) a widening gap between domestic marketed cereal supply and demand, leading to higher prices, (ii) marketing constraints, contributing to higher and more volatile prices, and (iii) policy uncertainties, resulting in higher price volatility.

Food consumption in SSA is expanding rapidly as a result of high population growth, rapid urbanization and income growth. SSA has the highest population growth rate in the world, growing at 2.3 percent per annum between 2005 and 2010, compared to 1.1 percent in Asia or Latin America. Urban areas in the region are expanding rapidly, at a world annual fastest rate of 3.4 percent between 2005 and 2010. Urban growth has also contributed to increased demand for



imported staples and high value crops. Further increase in food demand resulted from a strong economic and income growth over the last 10 years, especially in mineral-rich countries.<sup>3</sup>

In contrast to the expanding demand, the performance of cereal production in SSA has weakened in recent years. With a decrease in arable land per person<sup>4</sup> and stagnation of yields<sup>5</sup>, food production has failed to keep pace with population growth, thus contributing to the rise in price levels. As shown below, the use of inputs such as fertilizer has declined in recent years.

High production and yield variabilities, particularly in the case of maize, have contributed to price volatility in SSA. Even among developing countries with similar mean yields, variability is nearly always higher in SSA countries (Smale, et al., 2011). Recent figures of maize production in 15 African countries also show that annual variability of production increased during the period 2005 to 2010, compared with 1998 to 2004. Production variability may increase in the future if the frequency of extreme weather events increases due to climate change.

High marketing costs, underpinned by high transport costs and inadequate facilities, together with policy uncertainties, are also major contributing factors to high and volatile prices. Despite their critical role in soothing seasonal food production and stabilizing prices for the producers, processors and consumers, warehouse facilities are inadequate in the region. Unpredictable government operations in grain markets, lack of quality standards with respect to moisture content, and threat of grain confiscation when grain prices start rising, among others, have discouraged investment in grain storage (Jayne, et al., 2010).

Policy responses to high food prices have included export bans and restrictions, tariff reductions, price

controls and distribution of grain at subsidized prices. The responses were largely unpredictable and ad-hoc in nature, creating market uncertainty and price volatility (Rashid and Minot, 2010).

## 4. The impact of volatile and high prices on producers, value chain operators and consumers

**While price volatility negatively affects nearly all producers, value chain operators and consumers, high price levels have both negative and positive effects.**

Episodes of volatile prices create uncertainty and risks for farmers, wholesalers, retailers, millers and processors and consumers. With no markets for price risk management and limited access to credit markets, volatile prices tend to reduce farm-level investment. Financial institutions may find extending credit to grain traders and millers a risky venture if prices are volatile, and may therefore increase substantially the cost of borrowing. Historically, the boom of agricultural production in Europe and North America was supported by public policies that ensured price stability, hence stimulating entrepreneurial risk and investment. In the absence of such policies, price shocks and temporary reductions in disposable income can lead potential investors who are both producers and consumers to draw down on their capital, leading to poverty traps (FAO/SOFI, 2012). Unpredictable prices do not provide a secure environment for investment and consumption decisions.

Unlike price volatility, high price levels have both negative and positive effects, depending on the status of the individuals. Urban consumers do not produce food, so increased food prices reduce their initial real income. For the urban poor who spend a large share of their income on food, shifting to less nutritious food or reducing food intake could be the main coping mechanisms. As a result of lower calorie intake and reduced consumption of vitamins and minerals, undernourishment and micronutrient deficiencies increase. Intake of less food over a longer period can cause permanent reductions in a child's health and

<sup>3</sup> Despite Global Slowdown, African Economies Growing Strongly – New Oil, Gas, and Mineral Wealth an Opportunity for Inclusive Development, World Bank Press Release:

<http://www.worldbank.org/en/news/2012/10/04/despite-global-slowdown-african-economies-growing-strongly-world-bank-urges-countries-spend-new-oil-gas-mineral-wealth-wisely>

<sup>4</sup> Arable land per person in SSA declined from 0.55 hectares in 1961-1970 to 0.20 hectares in 2005 (Rakotoarisoa, M., et al., 2011) is this related to potential/theoretical or to actual arable land?

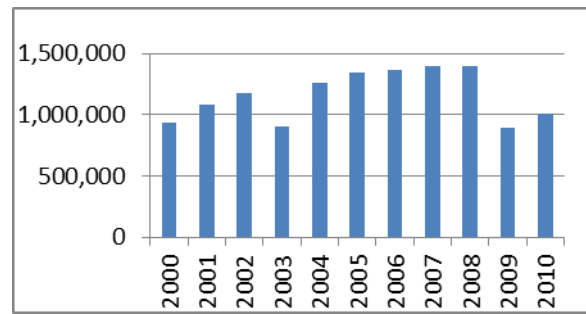
<sup>5</sup> Maize yields in Eastern Africa, for instance, increased from 1.13 tonnes/ha between 1961 and 1980 to just 1.30 tonnes/ha in 2008 (Rakotoarisoa, M., et al., 2011).

nutritional well-being. Higher food prices may also reduce spending on non-food items such as education and health (FAO/SOFI, 2012).

The impact of high prices on rural net buyers, who depend on markets for only part of their food and often supplement their income through off-farm activities, however, may depend on several factors. For marginal net buyers, for instance, the effect of food price increases can be minimal. By raising the income of surplus food producers, high food prices may also raise the income of net-buyers of food through multiplier effects. Rural wage rates and prices of non-farm products or services may increase, following a rise in food prices (Aksoy and Isik-Dikmelik, 2008). On the other hand, pastoralists and livestock producers are likely to suffer as net buyers of food and buyers of feed. Small livestock holders will be hit hardest, especially if they are also affected by drought or flood, which implies herd losses.

All other things being equal, farmers who are net food sellers benefit from higher prices. The benefit increases for those expanding their investment. However, if higher prices are accompanied by higher input prices and/or higher price instability, the resulting uncertainties and risks may reduce farmers' investment and lower supply response (World Bank and IMF, 2011). The available evidence also shows that the consumption of inputs such as fertilizer declined sharply in 2009 (Figure 4) probably as a result of energy and fertilizer prices which rose more than grain prices in 2008 (Abbott, 2009). Inadequate supply response to high and volatile prices due to output and input price risks, as well as limited access to finance, technology, etc., could mean that food supply will remain tight and prices may rise further in the long-term.

Figure 4: Fertilizer consumption in tons – 18 SSA countries



Source: AfricaFertilizer.org of IFDC (International Fertilizer Development Center)

At the macro level, more volatile and unpredictable prices may slow down economic growth by reducing investment at the farm level and along the value chain. The impact of high food prices on the overall economy can also be negative: high food prices may result in overall inflation, especially in poor countries where consumers often spend more than 50 percent of their income on food. Following the 2008 food crisis and fearing political instability, government expenditure had shifted away from capital accumulation to less productive expenditures such as universal food subsidies. Rising international prices in recent years have also increased the cost of food import of low income food-deficit countries, exacerbating balance of payment and budgetary problems (UNCTAD, 2008). Sustaining investment in agricultural production and preventing rural exodus will be achieved in the long-run only through provision of remunerative and stable income to the majority of rural producers. This should be one of African governments' main priorities.

## 5. Policy challenges

Output price increases are not completely, predictably and rapidly transmitted to producers, while increases in input price are passed on fully and quickly. High and volatile prices have undermined food security and poverty alleviation efforts in Africa. Three major policy challenges characterize the response to high and volatile prices: (i) consumer versus producer support measures; (ii) food self-sufficiency versus import dependence; (iii) market development versus government intervention.



*While consumer protection measures reduce producers' incentives to invest, producer support measures will benefit consumers in the long-run:*

Many African governments responded to high prices with country-wide or across-the-board consumer support measures, specifically reducing tariffs and domestic taxes, export bans, price controls, food aid, or releasing stocks at subsidized prices, but these measures have major drawbacks. First, such actions often create uncertainty in the market and lower prices received by farmers. Second, because general price subsidies transfer income to everyone, their fiscal cost can be high and divert resources from food and agricultural development activities (Demeke, et al., 2009). Targeted safety net programmes offer a better alternative to country-wide subsidies, although effective safety nets take a long time to design and finance, and are unlikely to help in conditions of high food prices where the targeted poor are a significant proportion of the population (Timmer, 2010).

Support to producers is often inadequate and ineffective. A number of barriers, including policies in support of consumers and high transport costs prevent the transmission of high prices to producers. High transport costs and an inadequate business environment in rural areas contribute to high prices of inputs and consumer goods. Measures aimed at protecting producers against price or production risks are largely non-existent. This is in contrast to the situation in developed and many emerging and developing countries in Asia and LAC where farmers are protected through various price and production risk management schemes and subsidized inputs and services (Demeke et al., 2012).

*Sluggish growth in domestic food production is commonly accompanied by increasing dependence on food imports:*

With stagnating per capita food production, food imports have surged in many African countries in recent years. But food imports are an expensive option for poor countries. Because of high freight costs, port charges, domestic transport costs, margins, etc., local prices of imported staples are unaffordable for the poor. In addition, most SSA countries have a limited capacity for importing food

items. For instance, food imports accounted for about 24 percent of the total value of export earnings for Eastern Africa countries in 2005 to 2009 (FAOSTAT). This share is much higher than the share of 8.8 percent or less, which is an indicator of the ability of a country to finance its food imports out of its total export earnings (Breisinger, et al., 2010).

Despite the predominant role of agriculture in the economy and overall employment, Africa's agricultural GDP per capita is the lowest in the world (one-fourth of the world's average) (Rakotoarisoa, et al, 2011). CAADP seeks to reverse the trend through allocation of a minimum of 10 percent of the national budget to agriculture and increasing investment to improve land and water management (Pillar 1), rural infrastructure, trade and market access (Pillar 2), reducing hunger and increasing food supply (Pillar 3) and enhancing agricultural research and dissemination of results (Pillar 4). Slow but significant progress has been made and some positive achievements are registered.

*Market development is hampered rather than being supported by government interventions:*

Besides sudden and often unplanned interventions that have raised the cost of doing business, discretionary government interventions have discouraged private investment in the value chains of staple grains. Many parastatals in Eastern and Southern Africa try to outcompete instead of complementing the activities of the private sector. Lack of trust, cooperation and coordination between public and private sectors has created great risks for the private sector (Jayne, et al., 2010). Poor management of grain reserves can destabilize private expectations, leading to more market instability.

Another major challenge is related to the massive market failure resulting from the lack of adequate infrastructure, asymmetric information, market monopolies and adverse selection. These challenges are aggravated by the substantial subsidies allocated to producers in developed countries, which translate into unfair competition to African producers on international and local markets.

A well-designed public intervention into the market economy is therefore crucial and a second best efficient market economy has to rely on a policy mix



where the government supports private sector development through the provision of infrastructure services and by building confidence for effective public-private partnership arrangements.

## 6. Key messages

African countries endure relatively higher levels of price volatility compared to other regions. Poor consumers are negatively affected by high and volatile prices which also affect producers and other value chain stakeholders. Producers have not benefited from high prices because output price increases are rarely transmitted to the farm level, while increases in input prices are passed on fully and quickly. From a policy perspective it should be recognized that:

- High and volatile prices are largely caused by structural problems of low investment and lagging domestic food supply, market failure and weak and uncertain policies; and also by increased dependency of African countries on world markets which are very volatile.
- Untargeted policy measures intended to address the impact of high and volatile prices on consumers can stifle incentives to producers, undermine supply response and perpetuate a food crisis.

### THEREFORE:

- Direct and effective transmission of stable and remunerative prices to producers would make inputs, such as improved seeds and fertilizer, more profitable and easy to adopt, leading to increased production and lower prices for consumers in the long term;
- Improved design of government market interventions can strengthen the capacity of traders, millers/ processors and other operators to cut marketing costs and reduce price levels for consumers while raising output prices and lowering input prices for producers;
- A combination of price and production risk management tools need to be incorporated into investment plans and policies to raise productivity of smallholder agriculture and prevent food crisis rather than trying to cope with

its impact. These include flexible trade policies to address international price spikes and import surges; technologies and affordable inputs for sustainable increases in production; warehouse receipt systems for stock management and other systems for storage and postharvest management; financial services; and agricultural information systems.

## References

For more details, please refer to the paper: Demeke, M., et al. (2012) "Understanding High and Volatile Prices of Staple Grains in Africa: Causes and Policy Challenges". ESA Working Paper, May.

Abbott, P. (2009), Development dimension of high food prices, OECD Food, Agriculture and Fisheries Working Papers, No. 18.

Breisinger, et al. (2010), Food Security and Economic Development in the Middle East and North Africa Current State and Future Perspectives, IFPRI Discussion Paper 00985, May.

Cornia, G. A., L. Deotti, and M. Sassi, (2012), Food Price Volatility over the Last Decade in Niger and Malawi: Extent, Sources and Impact on Child Malnutrition, UNDP, Regional Bureau for Africa, Working Paper, WP 2012-002: February.

Dawe, D. (2008), Have Recent Increases in International Cereal Prices Been Transmitted to Domestic Economies? The experience in seven large Asian countries, c/ESA Working Paper No. 08-03, April.

Demeke, M. et al., (Forthcoming ), Understanding high and volatile prices of staple grains in Africa: Causes, Impacts and Policy challenges, FAO/ESA.

Demeke, M., G. Pangrazio and M. Maetz (2009), Country responses to the food security crisis: Nature and preliminary implications of the policies pursued.

Demeke, M., D. Dawe, J. Tefft, T. Ferede and W. Bell (2012), Stabilizing price incentives for staple grain producers in the context of broader agricultural policies Debates and country experiences, FAO/ESA Working paper No. 12-05, September 2012.

FAO. (2007). The State of Agricultural Commodity Markets, Rome.

Hazell, P. (2009), Transforming Agriculture: The Green Revolution in Asia (chapter 3), in David J. Spielman and Rajul Pandya-Lorch (eds.), Millions fed: proven successes in agricultural development, IFPRI, Washington D.C.

HLPE, 2011. Price volatility and food security. A report by the High Level Panel of Experts on Food Security and Nutrition of the Committee on World Food Security, Rome.



Jayne, T.S., N. Mason, R. Myers, J. Ferris, D. Mather, M. Beaver, N. Lenski, A. Chapoto, D. Boughton, (2010), Patterns and Trends in Food Staple Markets in Eastern and Southern Africa: Towards the Identification of Priority Investments and Strategies for Developing Markets and Promoting Smallholder Productivity Growth, MSU International Development Working Paper No. 104.

Minot, N. (2010), Transmission of World Food Price Changes to African Markets and its Effect on Household Welfare, Paper to be presented at the COMESA policy seminar "Food price variability: Causes, consequences, and policy options" on 25-26 January 2010 in Maputo, Mozambique under the COMESA-MSU-IFPRI African Agricultural Markets Project (AAMP).

Rakotoarisoa, M, M. Lafrate, and M. Paschali (2011), Why Has Africa Become a Net Food Importer? Explaining Africa agricultural and food trade deficits, Trade and Market Division, FAO.

Rashid, S. and N. Minot (2010), Are Staple Food Markets in Africa Efficient? Spatial Price Analyses and Beyond, Paper to be presented at the COMESA policy seminar "Food price variability: Causes, consequences, and policy options" on 25-26 January 2010 in Maputo, Mozambique under the COMESA-MSU-IFPRI African Agricultural Markets Project (AAMP)

Smale, M., D. Byerlee and T. Jayne (2011), Maize Revolutions in Sub-Saharan Africa, Policy Research Working Paper, 5659, The World Bank Development Research Group Agriculture and Rural Development Team May.

Timmer, P. (2010) "Reflections on food crises past," Food Policy, 35:1-11.

UNCTAD (2008), Addressing the Global Food Crisis: Key trade, investment and commodity policies in ensuring sustainable food security and alleviating poverty, New York and Geneva.

World Bank and IMF, (2011), Responding to Global Food Security Volatility and Its Impact on Food Security, Attached for the April 16, 2011, Development Committee Meeting is a document entitled "Responding to Global Food Price Volatility and Its Impact on Food Security," prepared by the staff of the World Bank.