Focus Section A

Food Price Volatility in West Africa: Impacts, Causes, and Policy Options

Agricultural prices vary, seasonally and from year to year, for a variety of reasons. Price variation is expected by participants in agricultural markets and is neither detrimental to allowing efficient markets to develop nor a disincentive to short- and long-term investments in the sector. It becomes a concern when the amplitude and the frequency of price changes are so large that consumers and producers face serious problems in coping with the changes. This situation is described by the term price volatility. Since the 2008 spike in world food prices, the term volatility has often been used in debates in West Africa as synonymous with price increases, but historically large and frequent falls in agricultural prices have been at least as frequent and problematic as price spikes. It is important to distinguish between increased price volatility and a higher level of average prices, as different policies are needed to deal with each.[35]

Nature and impacts of price volatility

Staple foodstuffs, particularly in unprocessed form, are often characterized by inelastic demand, whereby the quantity demanded changes little with a variation in price. Conversely, inelastic demand inplies thar even small changes in supply result in disproportionate changes in prices. The impacts are larger in the thin markets that characterize many West African countries, wherein a large proportion of production is consumed on the farm. In such situations, a relatively small change in output can result in a large change in marketed surplus, leading to large changes in market prices. In the absence of compensating imports or stocks to augment domestic supplies, food crop production shortfalls result in large increases in price of food, with devastating effects for poor households. Conversely, a bumper domestic crop can lead to a collapse of producer prices unless surplus production can be absorbed in the export market or used to build up domestic stocks. These depressed prices can have disastrous effects on farmers as well as other participants in the domestic food system. The effects can be particularly devastating for poor smallholders who do not have access to credit and thus may have to sell farm equipment and livestock to cope with price collapses, which then constrains their ability to expand production in the future when prices increase.

Sources of price volatility

Price volatility comes from two sources. One part is imported from the volatility of international markets with which West Africans trade, and one part is endogenously generated from supply and demand shocks internal to the region. As a general rule, imported volatility is more important in countries that trade extensively internationally, depend heavily on food imports, and adopt policies that allow fluctuations in international prices to be transmitted into domestic markets. Also, as a general rule, landlocked countries with high transport costs from the port to internal markets (such as the Sahelian countries of ECOWAS) and high marketing and other transaction costs, or countries that consume staple foods not traded internationally, are much more susceptible to endogenous than imported volatility.

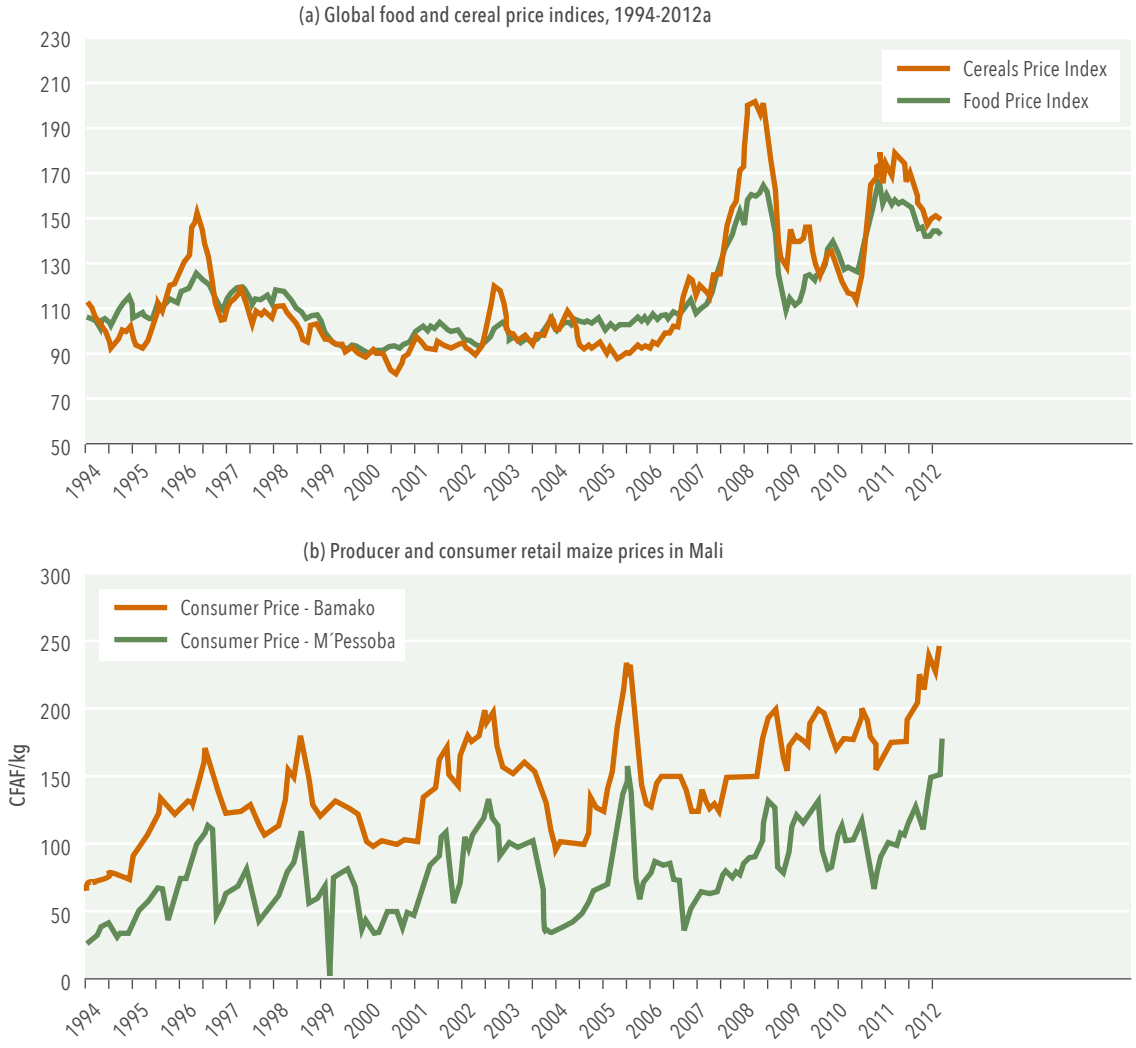
Figure A.1 illustrates these two sources of volatility. Panel (a) shows the volatility of world food prices as measured by the FAO food price and cereal price indices, while Panel (b) shows the

35 Analysis by IFPRI (Minot, 2012) shows that while prices for many basic staple foods became more volatile in international markets during the period 2007-2010 compared to 2003-2006, in the 11 African countries for which time-series data were available, prices for these commodities generally did not become more volatile, although they did increase in absolute magnitude.

variability of farm and retail-level prices in Mali over the same period. What is striking is that while world prices (a potential source of imported price volatility) varied in recent years by a factor of two, farm-level maize prices varied by a factor of up to four, suggesting that locally generated factors were at least as important as imported factors in generating the price volatility facing Malian farmers.

The sources of global price volatility, including factors such as extreme weather events, decreased carryover stocks and the imposition of biofuel mandates in OECD countries, have been well documented in the literature. (For recent summaries, see Konandreas, 2012a; and HLPE, 2011). Factors contributing to endogenous volatility include the thinness of domestic markets; weather and pest shocks; weak transport infrastructure; high transaction costs of regional trade; weak information on the level of production and stocks in the region, which creates uncertainty for both traders and governments, often leading to poorly informed market actions; and the unpredictability of government policy interventions, particularly regarding regional and international trade.

Figure A.1 *Examples of imported and internally generated price volatility*



Sources: (a) FAOSTAT, and (b) Observatoire du Marché Agricole (2014)
[a]2002-2004 = 100

ECOWAS experience with price volatility

Price spikes and price troughs are the two extremes of the price spectrum, and both have been a challenge for the ECOWAS countries. Regarding food price spikes, the most recent experience was in 2007-08, 2010-11 and again in 2012. The global food crisis of 2008 induced some major international grain-exporting countries, such as India and Thailand, to restrict exports in order to protect their domestic consumers. Some grain exporters in West Africa, such as Burkina Faso and Mali, likewise banned exports. The trade restrictions reduced volumes available in international and regional markets, thereby increasing price volatility. They also created doubts among national policy makers about the reliability of international and regional markets as a way of ensuring domestic food security – thereby leading to policies aimed at increasing the level of national food self-sufficiency and moving away from regional- and trade-based food security. In the long run, such policies deprive these countries of the potentially stabilizing effects that trade could offer in smoothing out domestic production variability.

It is not surprising that considering the heavy dependence of West Africa on imports for some key staples such as wheat and rice, local consumers felt the brunt of the price spikes since 2008. For example, between July 2007 and July 2008 rice prices rose by 43% in Mali, by 50% in Niger, by 64% in Burkina Faso and by 112% in Senegal (Demeke *et al.*, 2011). All countries have been affected, but the coastal countries more so because their consumption basket is more heavily laden with imported wheat and rice compared to the Sahelian countries, which consume more sorghum, millet and maize. However, even for those commodities, prices increased considerably (for example for millet by 28% in Mali, 39% in Niger, 46% in Burkina Faso and 8.5% in Senegal, during the 2007-08 period). Partly, this was also due to consumers not being able to afford the imported rice and wheat and shifting to local grains. Production of these locally grown crops also dropped significantly in 2007, which amplified the inflationary pressure of high international prices in 2007-08.

As would also be expected, in a region where households spend up to 75% of their income on food and where many of them are already at risk nutritionally, high prices had detrimental effects on short-term food security. Reduced consumption was a general consequence of the crisis, and civil unrest and large-scale riots were also a common response in many West African capitals (Aker *et al.*, 2011).

While recent years have been characterised by a period of high world food prices, the opposite has often been the case in the past. For a region with a high degree of dependence on the world food market, periods of depressed world food prices have often been associated with import surges. In primarily agricultural economies, unfair competition for domestic producers of competing commodities resulting from these import surges[36] has been an important food security issue.

FAO analysis, spanning a decade and involving selected commodities and developing country situations, attempted to identify the incidence of import surges, their sources and impacts, and the actual measures that government and private sectors have taken in response.[37] In the ECOWAS region, some specific commodity groups have been particularly affected by such surges, including poultry, rice and dairy products.

In the case of poultry, 52% of the total cases of import surges identified between 1995 and 2003 concerned Africa, of which nearly half were West African countries (FAO, 2006b). A general opening of economies under regional trade agreements combined with structural adjustment requirements of donor organizations limit countries from increasing applied tariffs, even if significantly below bound rates committed to WTO. In the case of Côte d'Ivoire, poultry imports expanded six-fold between 1998 and 2004. In Ghana and Senegal, a lowering of tariffs led to a four-fold import rise over 2000-05. The Ghana Poultry Farmers Association led a successful campaign to increase tariffs

36 Although there is no universally accepted definition of import surges, they are generally described as sudden and often relatively short-lived increases in imports (Rakotoarisoa et al. (2011).

37 This work is summarised in a recent volume by Rakotoarisoa, et al. (2011). Analyses of import surges by OXFAM include Ceesay et al. (2005; Diagne (2004; Fowler (2002).

on poultry imports from 20% to 40%; however, the new tariff rate could not be implemented due to conflict with other protocols and government obligations, allegedly under IMF pressure (Sharma, 2011; for more details, see Chapter 10).

In the case of rice (FAO, 2006c), Africa also saw the highest occurrence of import surges (some 56% of the global total identified between 1983 and 2003, with West Africa accounting for 40% of them). Several contributory factors have been identified, including exchange rate appreciation in some countries. However, in some cases, such as in Côte d'Ivoire (in 2000, 2001 and 2002) and in Ghana (in 1998 and 2001), low world prices have been the primary factor behind import surges.

In the case of dairy products (FAO, 2006a), Africa accounted for 49% of total import surges identified between 1999 and 2003 in skim milk powder (SMP) and 55% of those in whole milk powder (WMP). Of these, West Africa accounted for nearly 50% for both dairy products. A mix of external and domestic factors has been identified for the occurrence of import surges in dairy products. These include domestic and export subsidies in main exporting countries, combined with low import tariffs in importing countries, currency appreciation in some of them, as well as constraints in domestic dairy development due to high cost structures of local production, inadequate marketing and transportation infrastructure (see Chapter 10 for more details).

Overall, countries in the ECOWAS region have often been affected by import surges, with external factors such as low import prices and dumping of products as contributing factors. However, domestic causes such as low productivity, lack of competitiveness, trade and market reform policies, weak institutions and market failures have often been key internal constraints contributing to import surges. Thus, the FAO studies do not support a widely held view that trade liberalization itself was the main cause of import surges, but one out of many contributors to the surges.

The consequences of import surges also varied widely across products and countries, and the perceptions about their impacts were also mixed among various stakeholder groups. While import surges caused minor or no decline in profit or market shares in some cases, they provoked the collapse of the entire sector in other cases. Similarly, while small-scale producers felt harmed by import surges, others such as large-scale producers, processors, traders and especially consumers often claimed benefits from the import surges. This raises a difficult political economy dilemma in dealing with the surges.

Selected policy options to deal with price volatility in the region

There are a number of policy instruments available within the ECOWAS region to mitigate and deal with the effects of both endogenously generated and imported agricultural price volatility.

Stabilizing production systems

Strengthening the resilience of domestic production is a key factor in reducing endogenous market volatility. Investments in irrigation and better soil and water management are particularly critical, especially in light of climate change. Research into crop and animal varieties that are more resilient in the face of weather conditions can also reduce variability in supply and hence limit volatility. These types of investments are planned both in the regional and national CAADP agricultural investment plans discussed in Chapter 11.

Promoting more fluid trade within the region

The routine imposition of informal trade bans by some member states during periods of high prices is not only in violation of the ECOWAS Treaty but, by making regional markets thinner, aggravates price volatility at the regional level. Proposals currently included in the regional ECOWAP programme (described in Chapters 11 and 12) to reduce barriers to regional trade would help move the region towards a notion of regional food security and away from the notion of national food self-sufficiency. By making regional trade more reliable, such measures would also open up opportunities

for investors to exploit regional economies of scale in agricultural production, storage, processing and distribution, as well as risk-management possibilities, thereby creating incentives for increased investment. This would not only increase aggregate regional food output but also result in a broadened and diversified food commodity basket which is also an effective defence against price volatility.[38]

Improving market information and coordination

Improving the information base. Lack of access to timely market information hinders market transparency, price transmission and the efficiency of markets. Information on informal trade flows within the ECOWAS region and on inventory levels at the farm and commercial levels is particularly weak. Lacking such information, governments frequently are tempted to restrict exports, fearing that "too much food is flowing out of the country." Not knowing actual volumes traded, governments are also unable to gauge imports, especially during periods of crises, with potentially adverse fiscal and food security consequences. Therefore, an important first step in improving the information base to better respond to price volatility would be to build upon current efforts of CILSS to better quantify informal cross-border trade in basic foodstuffs and develop improved tools to gauge the levels of commercial and farm-level inventories in the system.

Putting in place a trade surveillance system. For the ECOWAS to be successful against the threats of import surges during periods of depressed world prices and for timely scheduling of cereal imports in situations of increasing prices, an effective trade surveillance system at the regional level is needed to provide timely market information and give an early warning of impending problems. In addition, there is need for analytical capacity to consider possible response options and assess credibly possible regional and country-specific impacts. Such actions fall under the mandate of the proposed regional agricultural information system, ECOAMIS, which presumably would work closely with the recently constituted AMIS (Agricultural Market Information System) coordinating structure at the FAO (FAO, 2011a). The information system needs to be complemented by creation of mechanisms within the ECOWAS structure for technical consultations on possible national and regional policy responses and remedial actions in cases of external threats to food security, as well as for advocating a strong political will to act regionally and not nationally.

Strengthening physical and logistical infrastructure in the region

In addition to streamlining agricultural and trade policy across the ECOWAS and improving information systems, there are also important physical, institutional and logistical constraints that impede the movement of supplies from surplus to deficit areas. In particular, during periods of shortage, expeditious mobilization and transport of supplies through national borders to the deficit areas are critical in avoiding price escalation at the local level. To take advantage of the potential of regional trade to play a greater role in dampening price volatility, the following issues need to be addressed:

Reducing high transaction and transfer costs. High transaction and transfer costs affect the whole supply chain and many factors are responsible, both physical and policy related. These high costs discourage trade and increase marketing margins, with the result that a given change in price at the retail level translates into much larger proportional change at the farm level. The limited availability of navigable waterways as well as an inadequate railroad network implies that the bulk of trade in the region is carried out by the more expensive trucking mode, which adds considerably to the cost of the commodity ultimately paid by consumers. This is particularly true during the rainy season when journeys are longer and delays are frequent, leading to an increase in cost by about one-third. What is also damaging from the food security perspective is that the rainy season coincides with the lean season when the already-high price of grain becomes even higher because of the increased transport charges.

38 When food consumption patterns become more diversified, markets become more interlinked and stable than in cases where one commodity dominates food consumption patterns (Jayne et al., 2009).

Quick improvements in reducing transfer and transaction costs could be made by easing regional transport and transit formalities and cracking down on petty corruption, which is highly disruptive to the free movement of foodstuffs. This would require capacity building of border personnel and harmonization and enforcement of border formalities, and monitoring and reporting bad practices, inter alia through the *Observatoire des Pratiques Anomales (OPA)*.[39] Also important would be the promotion of better understanding and appreciation by traders of their rights and obligations emanating from the faithful application of official rules and regulations at the border and creating more effective mechanisms for traders to pursue grievances in case of alleged abuse.

Helping finance the building of storage capacity. Lack of efficient storage facilities in the region is one of the factors that limit temporal arbitrage and contribute to high seasonal price variability. Although public financing of storage capacity might not be justified on narrow economic considerations, this should be viewed as a public good with important externalities in terms of strengthening food security and in providing possibilities for local communities to avoid the pressure of selling their crops immediately after harvest at depressed prices and having to repurchase food during the lean season at much higher prices. Public financing of a portion of the cost of storage facilities does not imply, however, that such facilities should be managed by the public sector. The ECOWAP proposal for public-private partnerships in commercial storage and its support for expanded development of tradable warehouse receipt systems (see Chapter 11) are examples of models that merit experimentation. However, these initiatives need to be accompanied with improved grades and standards for the commodities being stored, as lack of formal grading standards makes it difficult to assure credible valuation of the inventory, thereby making collateralization of commodities very difficult.

39 OPA was established in 2005 jointly by the WAEMU and ECOWAS with the financial support of USAID and the World Bank, in partnership with the West Africa Trade Hub. Its objective is to facilitate trade by monitoring unlawful harassment faced by truckers along interstate highways in West Africa.

National and regional food stocks

Public stockholding operations are generally of two types: those aiming at price stabilization and those with the objective of safeguarding security of supplies. Public stockholding with the first objective in mind is often referred to as ***buffer stocks or price stabilization stocks/reserves***. The public intervention in this case is to buy commodities at harvest when prices are low, thus supporting prices to producers, and release stocks into the market during the lean season when prices are high, thus keeping prices in check. In general, the mechanism involved is a price-band, whereby action is triggered based on minimum and maximum target price levels. To the extent government intervention is able to defend these trigger levels, buffer stocks can help protect farmers' incomes and avoid excessive price increases for consumers. For such a policy to be successful, however, governments must be prepared to do whatever it takes to defend trigger levels (i.e. commit to open-ended expenditures to buy or sell product), which may or may not be possible depending on how the price-band is set and available resources. A narrow price-band and one that bears little relationship with import and export parity levels is difficult to maintain and invariably renders the policy costly and ineffective. For example, analysis by IFPRI (Minot, 2012) for 11 African countries between 2003 and 2011 showed that price volatility was higher in countries such as Malawi and Zambia that actively used buffer stocks to try to stabilize prices than in countries like Kenya and Mali that did not. This suggests that price stabilization efforts, if not carefully designed and implemented, can actually increase rather than decrease volatility.

Public intervention that aims at safeguarding security of supplies is often referred to as ***food security stocks or emergency stocks/reserves.*** The aim of such stocks is normally to target vulnerable segments of the population under direct distribution schemes (i.e. outside the market) and, occasionally, to augment domestic food supplies during years of national shortages. Short-term food security is thus the main objective of such stocks and not to influence price behaviour, although the latter is inevitably affected to some degree depending on the magnitude

of intervention. Hence the size of the food security stocks and their management are key considerations, both as regards costs as well as on how they may interfere with the market. For example, release of public stocks should not interfere with the discharge of private-sector stocks, in order to minimize disincentives and avoid crowding out the positive role of private storage in the market (Wright, 2009).

Factors involved in deciding on size would include historical variability of domestic production, import dependency and delays in securing imports, dependability of suppliers and affordability of likely volume of imports. It is clear that all these factors need to be carefully weighed taking into account both cost/benefit and food security considerations. Stocks tie up capital, are expensive to maintain and are prone to physical deterioration and losses. One option that has been used in many countries to help deal with these costs, and which ECOWAS is considering, is to hold a portion of the reserve in physical form with the remainder as a financial reserve, used to purchase additional product as needed.

Regional food reserves are arrangements of regional country groupings for pooling resources into a common regional reserve, to be drawn upon based on pre-agreed rules. The constitution of such regional reserves typically entails the earmarking of a certain percentage of each country's national reserve into the regional food reserve. The benefits of pooling resources at a regional level include economies of scale, greater price stability, enhanced regional cooperation and integration, facilitating movement of supplies across borders, and enhancing regional market information and monitoring of available food supplies. However, at times governments are reluctant to commit to such reserves, because of costs, a perceived loss of sovereignty over national food reserves, distrust of neighbours, legal obstacles, and a lack of commitment to honour the rules of the reserve during times of national food stress (ActionAid, 2011). Chapter 12 discusses ECOWAS's current plans to create a regional food security reserve.

Providing targeted support to farmers

ECOWAS countries have limited financial possibilities for providing subsidies to farmers. Any resources allocated in this area could best be used in the form of targeted and "market-smart" input subsidies (including subsidies for irrigation and equipment for improved soil/water management) to increase productivity of specific food security crops rather than price supports for farmers. In countries where a large part of the population spends most of its income on food, an input subsidy does not penalize poor consumers (which is the case of an output support policy) while providing an incentive to farmers (by reducing production costs). However, care is needed in the design of such programmes in order to make them effective and financially sustainable (see Focus Section C).

Trade measures vis à vis the rest of the world

Retaining flexibility in border protection. In the absence of budgetary resources to support farmers, tariffs can play an important role for domestic market stability and for protecting producers in years of low world prices. ECOWAS countries should preserve some flexibility in the form of bound tariffs above applied levels to defend against external volatility, partly emanating from policies in some OECD countries, reform of which is likely to be slow. However, existing flexibility in bound tariffs is not uniform across countries, with some of them having bound tariffs at multiple levels of those actually applied and others are already in a binding position.

While ECOWAS countries negotiated their bound tariffs at the WTO as individual entities, now the region is a customs union with a common external tariff and this will necessitate renegotiation of a common external bound tariff. It is important in this process that ECOWAS retain an effective margin of flexibility. This will require careful negotiations not only with other members of the WTO but also, and prior to that, careful assessment of the needs of the region for such protection, taking into account the sensitivi-

ties between ECOWAS countries as regards the degree of trade openness they would be prepared to have. Clearly, this will also depend on the other safeguard instruments envisaged under the Doha Round (see Chapter 12).

Rationalizing the selection of Special Products (SPs). Of particular interest for some of the ECOWAS countries are the two new provisions being negotiated under the Doha Round on Special Products and on the Special Safeguard Mechanism (SSM). The broad criteria to be used in the designation of SPs are food security, livelihood security and rural development. For a customs union with a common external tariff (CET) like ECOWAS, the list of SPs would have to be uniform for all member countries. The ECOWAS region has made important progress in this process in the context of promoting "strategic products for food sovereignty." The latter include all main cereals (millet, sorghum, maize and rice) as well as roots and tubers, fruit and vegetables, and animal products. However, it appears that more product specificity will be needed as regards the eventual list of SPs than the above general product categories and this may necessitate additional debates and consultations between the ECOWAS members. As regards the SSM, it is important to clarify how that may relate with the three ECOWAS additional safeguard instruments agreed under the CET negotiations.

Strengthening safety nets

Safety nets are tools to help manage the impacts of price volatility rather than limit volatility per se. There is already considerable experience in ECOWAS on safety net programmes to protect the poor and vulnerable in periods of stress. While these include measures that work though food markets, most of the interventions in the region are targeted, such as food-for-work and school feeding (WFP, 2011). Some countries dramatically increased investments in food-based safety nets following the 2007-08 food crisis. For example, Burkina Faso increased total spending on food transfers, including subsidized targeted food sales, direct food transfers, nutrition and school feeding, by more than 50% during 2008 and 2009.

Community granaries are an important safety net measure and are common in some countries in the region. Their record of performance is very mixed, with some operating very well and others plagued with serious management problems. The ECOWAP mobilizing programme on reducing vulnerability to food insecurity described in Chapter 11 calls for greater experimentation in various forms of safety nets (including such granaries) and drawing lessons from such experiences across the region.

Selected policy options at the international level

Imported price volatility is a function of the structure of international markets. While not directly under their policy purview, ECOWAS and national leaders could contribute to reducing global price volatility by advocating through international forums for a number of reforms in the rules governing the international agricultural trade. These include rationalising biofuel policies in OECD countries, strengthening WTO disciplines on export restrictions, reforming agricultural support policies in OECD countries that contribute to price troughs, rationalising food aid instruments and implementing the Marrakech Decision to improve the access of countries to financing that would ensure their ability to import food during periods of high world prices (see Chapter 12 for details).