

---

# Food Price Volatility: An International Policy Challenge?

PIERRE JACQUET

## INTRODUCTION

For the first time, food price volatility and food security have become major topics of international policy discussions and cooperation. Under the French presidency in 2011, the G-20 elevated these subjects as priorities, and the final declaration of the Cannes Summit in November 2011 included a number of provisions to address them. The G-20 declaration (Voituriez, 2012) was simultaneously hailed by some as usefully contributing to the issues at hand and charting a promising course of action and criticized by others for not addressing or being shy on fundamental issues such as speculation on food markets and the role of biofuels.

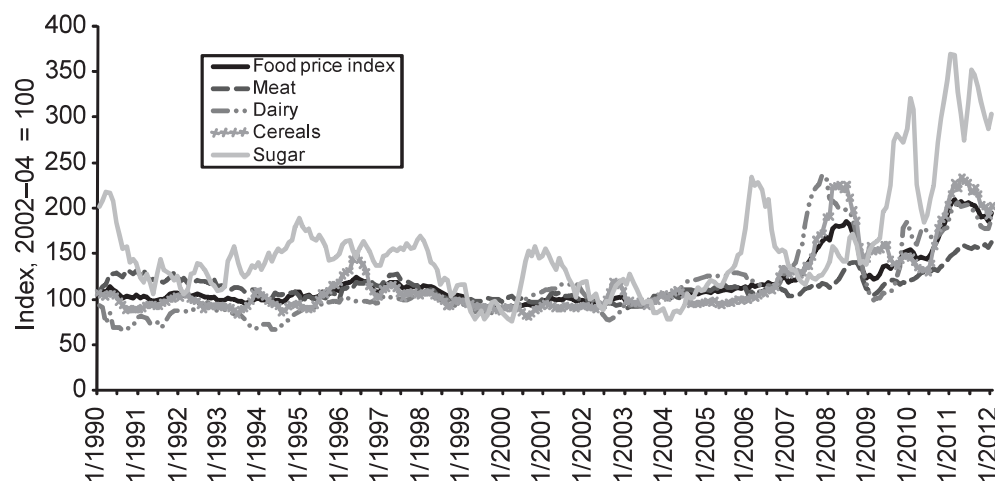
In fact, such an ambiguous perception naturally derives from some of the characteristics of crisis management. This chapter discusses the role of international cooperation on food security from a policy and political economy perspective, reviews some facts and controversies, and then turns to the political economy need for policy responses. The chapter ends by presenting a more normative stance on the role that the international community might usefully play and on the outcome of the G-20 in this area.

## FACTS AND CONTROVERSIES

Over the last quarter of a century, food prices have risen at an unprecedented pace in real terms (compared with manufacturing prices; see Figure 16.1). The recent movement of prices highlights two potentially different issues—the level of prices and the volatility of these prices.

---

This chapter draws on a mission given by President Sarkozy in support of the French G-20 presidency in 2011 on how to alleviate the impact of food price volatility for developing countries. I unfortunately cannot list all the persons to whom I am indebted for very useful comments and suggestions, but I nonetheless wish to gratefully acknowledge the many discussions with colleagues at the French Development Agency; the support of Olivier Cattaneo, Emmanuel Comolet, and Pierre-Emmanuel Darpeix; and invaluable seminars organized by Patrick Guillaumont and his colleagues at the Fondation pour les études et recherches sur le développement international (FERDI).



**Figure 16.1** Food Price Indices, 1990–2012

Source: Food and Agriculture Organization statistics online (February 2012).

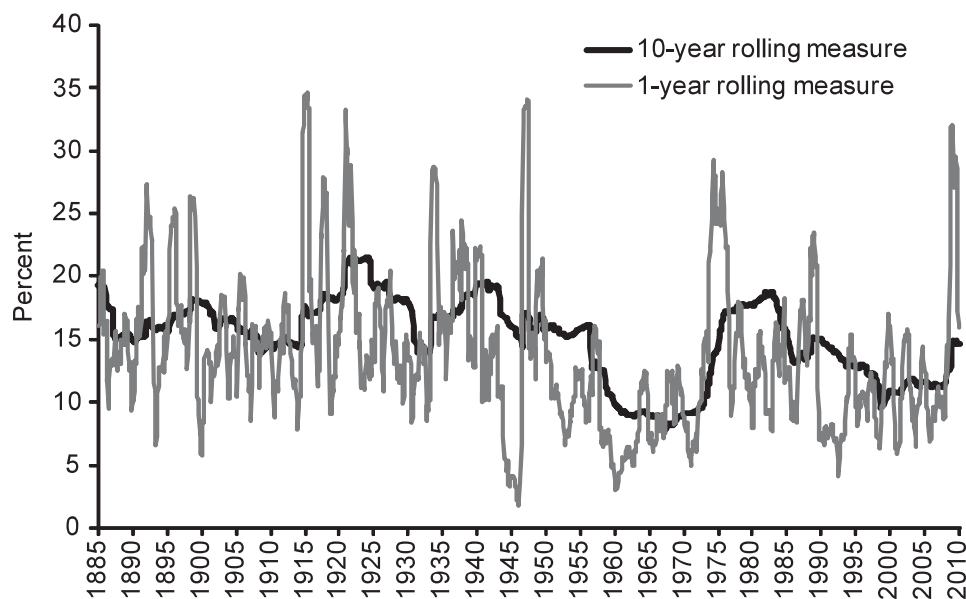
From Figure 16.1, it appears that both the level and the volatility (or at least the amplitude of fluctuations) have increased since 2005. Volatility matters because it creates uncertainty about future prices and incomes, which can be a crucial issue for producers and for consumers. Before turning to some of the issues linked to both the price level and its volatility, it is useful to review some notions and known facts.

There are two distinct, albeit complementary, ways to approach volatility. The simplest one, which can be called “historical volatility,” looks at the observed historical time series. The volatility of any indicator is measured by the standard deviation of the time series for that indicator. When price volatility is discussed, however, two adjustments are needed. First, one generally looks at the time series of the logarithms of prices, so that the measure will be robust to changes of units. Second, it is necessary to distinguish trend movements in prices from the variability of prices around the trend. However, the identification of a trend is model dependent so that a preferred measure of price volatility will be the standard deviation of the variations of the logarithms of prices (the “returns”). Because the measure can be made on several time scales, it is generally annualized. Casual observation confirms that historical volatility has risen significantly in the recent past. In particular, the price volatility for wheat and maize rose constantly between 2004 and 2008, reaching close to 40 percent in 2008. The most spectacular rise, however, was for rice, notably due to the decision of some substantial rice exporters, such as Thailand, to ban rice exports in an attempt to improve national food security.

However, historical volatility tells little about the future evolution of prices and would be a poor measure of price unpredictability and therefore of uncertainty. There are two technical approaches to assess the implicit volatility of prices. First, one can build an econometric model of the time series to identify any systematic, predictable components of volatility and the nonpredictable part, which can be used as a measure of uncertainty. But this is model dependent and

not very robust, and it does not take into account the impact of changes in expectation regarding future events. The other approach consists of using the information drawn from derivatives prices, at least for products for which derivatives markets exist and have sufficient depth. Using the Black and Scholes price formula for options, for example, allows an estimate to be computed of future price volatility as expected by market participants. On all products for which option prices are available, the implicit volatility, thus calculated, has significantly increased over the last 10 years. Markets have clearly become more unstable.

Against this background, available studies of price behavior point to a number of stylized facts that are relevant for any policy discussion of price volatility. First, there is a positive correlation between price volatility and price level (Sarris, 2011). When the price level increases, price volatility also tends to be higher. Second, food price volatility is not a new issue, nor is it a surprising feature. The low price elasticity of both supply and demand of food products suggests that prices need to move significantly to maintain balance in the face of shocks. Since the 1700s, commodity prices have been more variable than prices of manufactured goods, and their volatility has not clearly risen since then (Jacks, O'Rourke, and Williamson, 2009). Similarly, recent research by Roache (2010) exposes a historical succession of periods of low volatility and periods of high volatility of real food prices (Figure 16.2) with volatility notably high in the wake of the two world wars, in the 1970s after the first oil shock and the demise of the Bretton Woods system, and, of course, since 2006. Roache also distinguishes high-frequency volatility movements (which include seasonal effects and climate



**Figure 16.2** Real Food Price Volatility over the Long Term

Source: Roache (2010).

Note: This figure shows the annualized volatility of an equally weighted price index of corn, palm oil, rice, soybeans, and wheat computed from U.S. dollar-denominated prices deflated by the U.S. consumer price index; two measures of volatility are proposed—short term (over 1 year) and long term (over 10 years).

shocks) from low-frequency ones (which signal persistent changes in volatility). Periods of extreme fluctuations seem to recur periodically. In particular, the observation of real food prices over the very long term (e.g., since the end of the nineteenth century) does not seem to confirm any tendency of a rise in price volatility.

Price volatility is also time persistent—future volatility depends on the current one, so that there are volatility cycles that can be observed over long periods (Sarris, 2011). We may now be back in a cycle of high volatility. Gilbert and Morgan (2010) have documented that on average, the price volatility of agricultural commodities has been lower over the last two decades than over the two preceding ones, except in the case of rice. However, in recent years (since 2006), volatility seems to have significantly increased, notably for vegetable oils, cereals, and soybeans.

Finally, current prices depend on past prices. This autocorrelation can be explained in part by the dynamics of inventories (Deaton and Laroque, 1996), because the constitution of inventories supports current prices and smooths price shocks over several years. Even when shocks on production are independent, the existence of inventories leads to an autocorrelation of prices. The empirical observation confirms that price shocks are persistent, sometimes over several years. Cashin and McDermott (2002) found that the half-life of a shock to agricultural commodity prices (i.e., the average time needed for half of the effects to dissipate) is about 60 months. This suggests that attempts to stabilize prices around a fixed target can prove extremely costly and unsustainable. But it does not rule out the possibility of stabilizing prices around a moving average.

Controversies, however, abound and have resurfaced in the recent debates about policy options. They inevitably shape the national and international policy debate. This chapter cannot review them in adequate detail, but rather asks the question of what can be done given the existing controversies, assuming that most of them are not going to disappear. These bear on the analysis of the causes as well as the effects of price volatility. In addition to fundamental causes, such as demographic and economic growth, dietary changes, climate disasters, depletion of inventories, higher energy prices, competition from biofuel crops, and very low food stocks, speculation on agricultural markets has possibly fueled price volatility by spreading and amplifying a sense of panic (Gilbert and Morgan, 2010). But speculation is not likely to be the sole cause of the recent increase in volatility. It may also be seen as a signal that draws attention to the fact that fundamental issues have been ignored for too long. The historical recurrence of periods of high volatility suggests that there is much more to volatility than the relevance of any specific short-term cause of the recent burst. What we know, eventually, is that supply and demand are inelastic, that they may move in diverging ways, that the cushion of inventories is not always there to provide stability, that expectations of future evolutions do matter, and that there may be overshooting of prices in the restoration of market balance after any shock. But the state of academic knowledge does not allow the drawing of a precise and operational hierarchy of root causes of price volatility.

The second series of controversies addresses the impact of price volatility. Intuitively, there are two different sets of issues. One has to do with the impact of a hike in prices on poverty and vulnerability. There is little disagreement that unexpected price shocks result in increasing poverty and mainly affect the most vulnerable. However, this also says that food security is at least as much a problem of affordability as one of availability. Yet much of the attention goes to the need to increase production to feed a growing world. Although this prescription is probably valid—not the least because increased agricultural production is key to raising income levels in many predominantly rural developing economies—it misses one crucial aspect of food security, namely, the issue of food affordability for many poor households. Households tend to react to food price shocks through increased work by women and children, selling assets, an interruption of schooling and/or medical treatment, and a reduction in caloric intake. The cost of these shocks in terms of human capital is heavy, and even a transitory shock may have a permanent impact when households do not have the possibility of recapitalizing before the next crisis (Galtier, 2012).

The second set of issues deals with the impact of uncertainty (which is linked to unpredictability rather than instability; see, for example, Sarris, 2011) on producers' decisions. This is part of a broader issue, namely, the link between volatility and growth. Jacks, O'Rourke, and Williamson (2009) have noted that there is ample microeconomic evidence that income volatility penalizes physical and human investment. There is a rich theoretical literature that provides mixed results but tends to confirm the theoretical costs of volatility in countries where financial markets are incomplete and underdeveloped, where investors are credit constrained, and where risk aversion is high (see the survey by Prakash, 2011). Fafchamps (1992) and Poulton and others (2006) have shown how volatility leads to a reduction in investments and creates a trap for poor farmers, who have to rely on themselves to feed their families and therefore concentrate their effort on self-production and staple food without the option of diversifying into higher-yield agriculture.

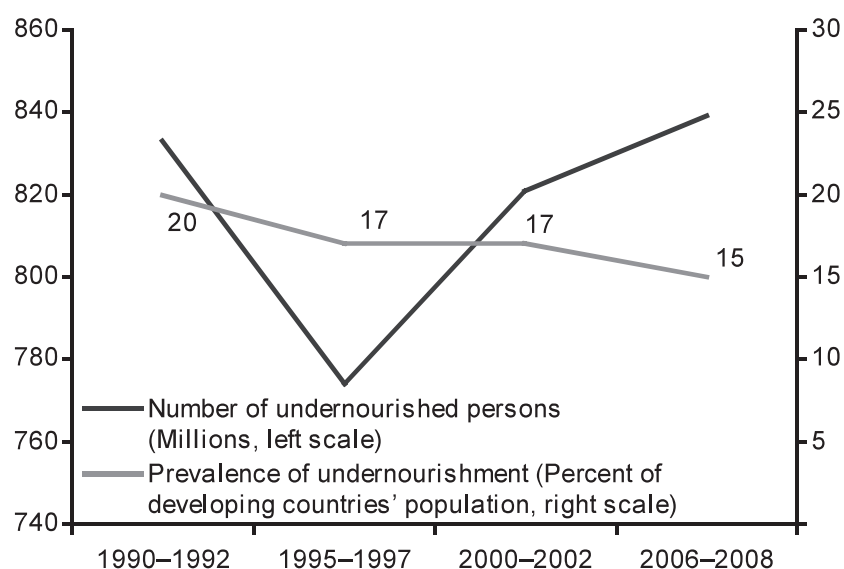
## CHALLENGES FOR INTERNATIONAL PUBLIC POLICY

From 2006 to 2008, and again in 2010 and 2011, prices of food products soared to historic heights, leading to a food crisis and to food riots in many parts of the developing world. Wheat prices more than doubled between the first quarter of 2007 and the first quarter of 2008, according to the Food and Agriculture Organization (FAO). This price spike appeared as yet another feature of a crisis of global proportions, starting with the subprime and financial collapse and involving dire economic repercussions. In 2011, the food situation dramatically deteriorated in the Horn of Africa, with reports of severe food shortages in many parts of Somalia. Toward the end of 2011, there were also alarming reports about the food situation in the Sahel area, where food prices have continued to soar. Reports from international institutions have documented dramatic increases in poverty linked to the food price spike.

Policymakers and their constituents tend to focus on important issues at times of crisis (rather than at any other time). There are many reasons for this. Given the inability of the mind to focus on all issues simultaneously, it is understandable that short-term pressures will set the priorities. Short of a sense of urgency, there is ample room for debate and controversy, and any course of action will meet with strong opposition; in addition, policymakers are subject to intense media scrutiny and pressure to show that they are in charge and to provide relevant responses to issues at hand. It is therefore no surprise that the international agenda in recent years and especially during the 2011 G-20 meetings has partly been shaped by a concern over global food security.

However, the problem, namely, a widespread difficulty in accessing food products at times of rising prices—brutally revealed and amplified by the recent crisis—cannot be said to be new. Food security was at issue well before the rise in price volatility highlighted the vulnerability of poor people and made access to food even more problematic. As an example (Figure 16.3), the proportion of undernourished individuals in developing countries, as measured by the FAO, declined very substantially in the 1970s and 1980s, but this movement slowed in the mid-1990s, and the proportion seems to have plateaued around 15 percent, which implies that the number of undernourished individuals has increased since then, topping close to 1 billion people in 2011, according to early FAO estimates (the whole methodology of measurement, however, is currently under revision).

The increased attention to food security and food price volatility is therefore easily understandable (and even welcome), if not fully satisfactory, in view of the prevalence of food insecurity well before the crisis. However, acting under the pressure of a crisis may not naturally lead to addressing the longer-term underlying issues. A crisis reshuffles the respective influence of various actors (Bricas and



**Figure 16.3** The Extent of Undernourishment

Source: Food and Agriculture Organization statistics online (February 2012).



Daviron, 2012), revisits old controversies, and opens new games of persuasion, building on the designation of a culprit to blame and against which possibly to ally. In this case, as in many other historical instances, the speculator became the obvious culprit, and derivatives markets were blamed; regardless of whether they were guilty of anything, they were delivering an unwelcome message of unsustainability that had not been heeded in time by earlier public policies. Naming and shaming the culprits were ways to indicate that the crisis was fully understood and straightforward to address. However, such debates may be counterproductive—they revive ideological oppositions, they point to easy culprits to blame for the current ills, they suggest quick measures against designated foes as if they were commensurate with the nature of the crisis, and they distract from attention to fundamentals.

Posturing and bickering do not make controversies disappear. There is a need and a pressure to act, but stakeholders diverge on the underlying causes and on what to do. Academic research is there to document the issues, but it seldom points to “the” correct way to interpret the situation: How much of a role did markets for derivatives play, what is the responsibility of “speculators,” how should the impact of the “financialization” of agricultural markets be assessed, and how much did biofuel production, however subsidized, contribute to tightening market conditions and to a food shortage? In many ways, these debates raise important issues. Some of them (such as biofuels and financialization) are new: There has been a dramatic evolution of international agricultural markets over the last decade, and commodities have partly evolved as a new class of financial assets. Understanding the implications does matter. Others are indeed very old, such as the potentially destabilizing role of speculation and of derivatives markets. The paradox is that derivatives were invented on agricultural markets in the second part of the nineteenth century precisely to help mitigate price uncertainty.

There was thus little chance that, under the pressure to act to respond to the crisis, policymakers and major constituencies would reach an agreement on such fundamental, albeit controversial, issues. A further difficulty is that on each of these issues, academic research will lead to nuanced views rather than universal truths and Manichean perspectives. Because of this fundamental inability to agree on the underlying causes and to enact the appropriate pieces of reform, the pressure to act and to reach agreement will generally be deflected toward dealing with the symptoms. Moreover, the public and political pressure bears on “deliverables,” that is, specific, visible, easily explainable actions that promise fast results. For example, responses to famines will have to include fundamental humanitarian components, such as food aid and transfers. They may also include measures on improving logistics for future humanitarian responses. But they are less likely to include a reflection on what might be done to avoid the next famine, that is, the underlying causes of the famine itself.

Another limitation of crisis management is that there is a great deal of pressure to announce visible and global solutions. Beyond improving the capacity for, and nature of, emergency responses, there is little room for one-size-fits-all approaches with respect to food security and price volatility. Moreover, many policy issues

are to be decided locally, rather than at the international level, so that it is unclear how and how directly the G-20, as a group, may contribute. More than a single set of approaches, there is a sort of toolbox of various market-based and policy-based instruments to deal with volatility and uncertainty. From the 1860s on, the Chicago Board of Trade introduced market-based instruments to hedge risks, such as forward contracts, futures, and options. These have been expanded considerably. More recently, insurance products have also been developed, and a new type of index-based insurance contracts has emerged.

One of the objectives of the G-20 was to facilitate the use of such instruments by developing economies. However, there are many obstacles: Entities in developing economies are constrained by size, by a lack of knowledge about market hedging and insurance instruments and about how to use them, by the costs of such instruments, and also by the fact that existing instruments may not be adapted to the nature of the risks that they face. This discrepancy between local and international risks, known as reflecting the “basis risk,” stems from many sources—exchange rate fluctuations, imperfect trade integration, specificity of the local commodities in terms of nature and quality, existence of purely domestic shocks and of additional risks linked to the local environment in terms of weather conditions, and also the state of infrastructure. The importance of the basis risk in developing economies suggests that few existing international hedging instruments may be relevant, even if there is a possibility of surmounting the other difficulties, and that only a tailor-made approach can really be valuable for these countries. The basis risk is not a theoretical curiosity; it has been empirically observed through the diversity of transmissions of international price shocks to domestic prices throughout the recent price crisis (see, for example, Daviron and others, 2011).

On the policy front, advanced economies, most notably the United States and member countries of the European Union, have developed farm policies that played a crucial role in the formidable expansion of agricultural productivity and production in the second half of the twentieth century. Over time, these policies, especially the EU common agricultural policy, have been singled out for their costs and some perverse effects linked to the distortions they entailed in regard to the functioning of national and international markets, and for the last 25 years, the main discussion has essentially been on the nature and pace of the necessary reforms. Still, they have made a major contribution, and their necessary reform was too easily interpreted as a necessary shift toward a retreat of the state and as a negation of the role of public policies.

The prevalence of exogenous risks in agriculture remains a powerful case for public policies, especially in underdeveloped countries. However, there are lessons to be drawn from our own policy interventions. They have been costly, which prevents an easy extension to developing countries, and they were in some cases based on objectives of price stabilization that were untenable and overly costly; there was a sort of confusion between targeting a price level, which may easily go against market trends, and stabilizing the movements of prices around a trend, which smoothes market signals but allows actors to heed these signals. In the



current context, there is a need to conceive of much more market-based public policies, which further points toward public-private partnerships.

Part of the disappointment expressed in the media is misplaced because it is based on a misunderstanding about what the G-20 may and should do, and this misunderstanding is unfortunately often maintained by official declarations. First and foremost, the G-20 is a political body of the highest level and therefore capable of formulating a shared vision and of providing political leadership and powerful incentives. It is therefore more of a catalyst and a facilitator than a direct decision body. The central contribution it may make is not so much in doing things as in getting things done by the myriad of relevant stakeholders, both public and private. It is in this spirit that the G-20 in 2011 focused on food price volatility.

The dilemma is how to move from a positive analysis, characterized by the few things we know, the many we do not know, and the prevalence of huge controversies (regarding the organization of markets, the role of speculation, the choice between conflicting uses of land, the demands of the environment, the impact of climate change, etc.), to a normative discussion of what the international community might do, such as through the political momentum generated by the G-20.

As argued previously, ignoring the controversies or trying to force agreement will not help; the best that can be done is to encourage more research to see whether a partial consensus can emerge occasionally. On most of the controversies, however, it is likely that both sides are right part of the time and in some circumstances. Consequently, one of the major contributions that the international community might make is to facilitate the search for local and evolving solutions rather than to try to think of a new grand design, even though the media and political pressures may push toward the latter. From this perspective, the G-20 in 2011 made very useful contributions. This chapter looks at three dimensions that received G-20 attention and may be pursued in a promising way, both in following up on the G-20 decisions in 2011 and through the G-20 meetings in Mexico and beyond.

## **Support Agricultural and Food Security Policies in Developing Economies**

There are many reasons developing economies need consistent and coherent farm policies, connected with other public policies and with a focus on food security.<sup>1</sup> In advanced economies, farm policies have played a key role in agricultural development, and it is hard to imagine that such development could take place in developing economies without active farm policies. The demise of such policies

---

<sup>1</sup> Alain de Janvry made this suggestion in a seminar at the Fondation pour les études et recherches sur le développement international (FERDI) on February 16, 2011. This approach can be compared to the establishment of Poverty Reduction Strategies as central coordinating mechanisms. A key for success, as argued in this chapter, is local ownership.

over recent decades has not produced success. Of course, policies may err, but it certainly does not imply that they cannot be useful. The recent succession of crises suggests that agricultural development has suffered from a lack of public policy focus, and the development simply did not happen properly on a spontaneous basis.

There are at least two central issues that need to be addressed. One is to provide vulnerable populations with an adequate safety net in the case of food price hikes such as those of 2007–09 and 2010–11. The other is to move from a crisis management mode to one of risk management and crisis prevention. The idea of crisis prevention means not only actions to try to reduce the likelihood of crises, but also a series of measures to be in a better position to face the next crisis.

However, there is a key concern in the design of policies, namely, ownership. The temptation has been great, on the donor and international community side, to approach policymaking in developing countries from a prescriptive mode, based on strong advice and even conditionality. This ignores the extent of the local actors' commitment that is necessary to make any public policy work. It also ignores the fact that policy can improve only through a learning process that is itself locally owned: Prescriptions from the outside are not likely to translate into authentic conviction unless they are themselves part of a locally organized learning process made of trial and errors. This is why an important suggestion is to move toward a results-oriented, rather than process-oriented, framework of policy support to assist developing countries in the formulation of their own domestic policies.

There has been a significant effort in this direction by many African countries in the context of the African-led Comprehensive Africa Agriculture Development Programme (CAADP) within the New Economic Partnership for African Development (NEPAD). One of the key processes at work within CAADP is the organization of national roundtables that involve public and private actors as well as donors and lead to an agricultural development compact, a pact between donors and governments from which country investment plans can be derived.

These multistakeholder pacts must address four main pillars, namely, land and water management, market access, food supply and hunger, and agricultural research. They must also meet the targets adopted by African governments to increase public investment in agriculture to at least 10 percent of their country's budget (according to the 2003 Maputo declaration that had also adopted the [missed] deadline of 2008) and to raise agricultural productivity by at least 6 percent.

CAADP has set up a very worthwhile process. Close to 30 countries have now established their national compacts and formulated the country investment plans. However valuable, the agricultural compacts hardly consider risk assessment and risk management. Their existence, however, provides a unique opportunity to start integrating a risk-based approach in agricultural development. This would benefit both consumers and producers and facilitate the implementation of the investment plans. NEPAD sent a request to the G-20 in September 2011 for assistance in capacity building for mainstreaming risk assessment and risk management in countries' CAADP national agriculture investment plans, and it has

proposed to start anchoring this approach in the two regional programs adopted by the Common Market for East and Southern Africa and the Economic Community for West African States as well as with a limited number of voluntary member states in these regional communities.

### **Create a Joint Donor Platform for Risk Assessment and Management**

Donors have individually accumulated substantial experience in risk management in agriculture. A team at the World Bank has worked on instruments and risk coverage in developing countries for many years. More recently, index insurance has received considerable attention, and a number of pilot projects have been engaged to start investigating its usefulness and relevance in developing country contexts. Swiss and Dutch cooperation has financed the creation of a website on agricultural risk management (the Forum for Agricultural Risk Management in Development or FARM<sup>D</sup>),<sup>2</sup> which was put in place and is administered by the World Bank. In 2008, the International Fund for Agricultural Development and the World Food Programme jointly launched a Weather Risk Management Facility. As part of the G-20 exercise, the World Bank Group's International Finance Corporation has launched an Agricultural Price Risk Management Product, which facilitates risk hedging by entities in developing countries through a risk-sharing agreement between the corporation and major investment banks.

In cooperation with the African Union, in the context of the African Risk Capacity initiative to capitalize on the natural diversification of weather risks across Africa, the World Food Programme has developed the Africa RiskView software to translate satellite-based rainfall estimates into real-time cost estimates. The French Development Agency (AFD) has focused on lending instruments that take into account the vulnerability of developing country borrowers to external shocks. AFD's countercyclical loan allows borrowers to benefit (on request) from five additional grace periods when facing a shock to their export receipts (defined as a fall of more than 5 percent from a five-year moving average of export receipts). There are other types of risk-mitigating instruments, such as the cotton price-smoothing mechanism also sponsored by the AFD in Burkina Faso. Risk management is therefore a lively area, and a great deal has been done already.

There are, however, several limitations to current efforts. First, there is a lack of coordination and experience sharing. There have not been systematic and shared evaluations, and it would seem very worthwhile to network on a systematic basis and on the basis of careful identification of what exists and serious evaluations of what works. This is why initiatives such as FARM<sup>D</sup> are so valuable and should be better known, strengthened, and scaled up. There is a need for a unique location for finding information on risk management instruments, approaches, and innovations in regard to their respective benefits and shortcomings, existing and past projects, evaluations, emerging good practices, and so forth.

---

<sup>2</sup>[www.agriskmanagementforum.org](http://www.agriskmanagementforum.org).

Second, past initiatives were naturally based on trial pilots to test instruments and products. Although this is necessary and very informative, it is also largely supply determined: One starts from an existing hedging or insurance product and tries to assess its relevance in a developing economy context. Through evaluation, these pilots provide a better knowledge of how the various instruments may work and on how to design them so that they will meet a local demand. However, they involve a partial approach to risk management, as opposed to a holistic, demand-based approach.

Given the variety of risks faced by developing economies in terms of agricultural development and food security and given the largely idiosyncratic character of these risks, there is a need for a careful risk mapping, which would then lead to asking what kind of policy measures and what kind of instruments or combinations of instruments (such as on standardized markets or tailor made) might help manage these risks. To put it differently, advice, support, and capacity building should be provided to establish such mapping of risks, to identify the relevant approaches and instruments, and to assist countries in implementing them. This would essentially be a demand-based and locally owned approach, whose essence would not be to test instruments, but to start from the problems that the configuration of risks creates for developing countries and ask how best to manage these risks.

Third, in the same line, there is no global issue-based attempt to propose innovative approaches on issues on which there might be a strong potential interest from our developing country partners and to expand the existing toolbox of risk management instruments and approaches to orphan subjects, for which there is no easily available set of instruments or solutions. For example, can any proposal be made to better manage the price risk on rice for African rice importers?

Finally, there is no systematic approach to risk management in agriculture. It would be very useful to provide developing countries with a place to turn to in order to find information and advisory services in regard to risk assessment and management. This is why the G-20 has asked international organizations to work together to provide expertise and advice to low-income countries on risk management. At a meeting in Washington, D.C., on September 22, 2011, the World Bank, the International Fund for Agricultural Development, the Inter-American Development Bank, and AFD jointly decided to explore the creation of a joint platform for agricultural risk management whose major purpose would be to collect and disseminate relevant information on instruments, approaches, existing expertise, and evaluation of existing pilots; to connect developing countries' demands for risk assessment and management to existing expertise and relevant networks; to organize the provision of advice and of training services; and possibly to commission studies to complement the existing knowledge when necessary.

Beyond such coordination, donors should also continue investing in financial innovations for agriculture finance toward a better contribution to risk management. The countercyclical loan put in place by the AFD would have interesting stabilizing virtues if it was adopted, in one form or another, by other donors: It would then provide an automatic, optional, and unconditional reserve of

liquidity in case of an exogenous shock. Attempts at providing safety nets through international agreements (such as the *Système de stabilisation des recettes d'exportation*, or *Stabex*) have largely failed to achieve their countercyclical objectives because they were not automatic and conditional. Incorporating an automatic countercyclical mechanism in existing loan instruments might be very valuable to address core vulnerability characteristics of developing countries.

There are many other routes for financial innovation that might usefully be explored, such as through the combination of loans and insurance or risk-hedging products. It is likely that the platform discussed above, through the exchange of experience and the advisory role played toward developing countries, would help create a momentum for demand-based financial innovation.

### **Create a Public-Private Partnership for Risk Management and Food Security**

Private actors, both domestic and foreign, play a major role all along the food value chain and therefore in improving food security. Even though they are not driven by philanthropy, many realize that responsible investment and contributing to food security are worthwhile objectives to pursue from a business point of view because they strengthen their position by making them appear as contributors to the common good. There is, therefore, room for innovative public-private partnerships in which public policy measures aim at engaging the private sector in the pursuit of a public interest objective, here, food security. This requires exchange between groups of agribusiness firms, local firms, farmers, and public authorities, and a sort of contractual framework emerges.

Worthwhile initiatives have taken place along these lines since 2009 and in the context of the G-20. The World Economic Forum has set up a New Vision for Agriculture initiative through which 17 global companies have pioneered a multi-stakeholder approach, on a global and a regional basis, to promote market-based and business-led solutions for sustainable agricultural investment and development. The avowed goal is to envision agriculture along three complementary dimensions—contribution to the environment, creation of economic opportunities, and achievement of food security. An interesting feature of this approach has been the inclusion of country programs, involving the public and private sector, donors, and the civil society, which set the initiative in the context of country-based and -owned development plans. In 2011, the World Economic Forum worked with the G-20 both to boost this approach and to see how it can contribute to the G-20 objectives and assist with the expression of the business community of the G-20 through the “B-20.”<sup>3</sup> The idea of a global public-private partnership for agricultural development and food security has thus received a strong impetus.

---

<sup>3</sup>The B-20 is an international group of companies and business representatives from G-20 countries. It addresses current global issues, formulates concrete proposals, and sends them to the G-20 for consideration in the G-20 summits.



However, the dimension of risk management deserves a better focus. The business sector can help with finding concrete and innovative solutions to manage agricultural risks in many ways. For one, financial companies are best placed to devise instruments that better hedge local risks than existing ones and to devise tailor-made, index-based insurance products. But beyond that, the business sector has a major role to play in investigating the development of contract-based agriculture. Contracts are a powerful way to manage risks over a given time horizon. They may result from a private-private decision, but there are many instances in which the public sector, both the local government and possibly donors, can promote private contracts by providing a conducive regulatory framework, by deciding complementary investments, by investing in training and capacity building, or by providing partial guarantees.

## CONCLUSION

Even though they were not explicitly formulated, there are five key messages in this chapter about the international policy challenge in regard to food security and price volatility. First, the objective of food security and a successful approach to food price volatility requires active public policies. However, these policies do not exist and need to be developed, keeping several characteristics in mind—there is no one-size-fits-all model, so that the design and nature of these policies will have to be local, with local ownership an essential element, and the nature of these policies will not resemble the top-down and exclusive nature of past public policies in developed countries. The rules of the game have changed, both in advanced economies and in developing countries, and successful public policies must now be based on the involvement of the various stakeholders. The state therefore appears as a coordinator and a catalyst.

Second, a key ingredient of such policies will be a successful, revisited public-private partnership. The private sector should increasingly be tied by memoranda of understanding and contracts with governments, through which they commit their contribution to a common goal within a sector-based program in exchange for specific regulatory, pricing, and other guarantees and for complementary public investments that will also strengthen their own effectiveness and profitability.

Third, this multistakeholder, catalytic approach can also be applied at the international level, where the G-20 can play (and has played) a significant role in aligning actions and priorities. The G-20 thus appears more as a process, conducted at the highest political level, than a world directory, and it may uniquely provide leadership, inspiration, and direction. Much pedagogy is necessary to disseminate such an interpretation to the media, to the general public, and to government circles as well as to align expectations with the reality.

Fourth, much more attention needs to be paid to agriculture risks. Risk-based approaches, so far, have been essentially addressed through specific instruments leading to implementing pilots in developing countries, whereas farm policies and much donor financing (outside such pilots) have tended to ignore the risks. Risk

is a crucial aspect of agricultural development and of food security, and its management is not simply a question of finding the right instrument, but is a core of the nature and effectiveness of development programs. But risk is also multi-dimensional and needs to be addressed in a holistic way. It includes, among others, price, weather, pests, and climate risks, and dealing with just one of these factors would be insufficient. Proper risk management requires a new culture of public policy, well beyond a necessary, conceptual, and practical knowledge of available financial instruments.

Finally, a key message is the need for more coordination among actors (both domestic and international), who tend to work in silos, across sectors, and between policies.

## REFERENCES

- Balcombe, K., 2011, “The Nature and Determinants of Volatility in Agricultural Prices: An Empirical Study,” in *Safeguarding Food Security in Volatile Global Markets*, ed. by A. Prakash (Rome: Food and Agriculture Organization).
- Bricas, N., and B. Daviron, 2012, “Food Crisis: A Reshuffling of Stakeholders,” in *Towards Agricultural Change?* ed. by P. Jacquet, R. K. Pachauri, and L. Tubiana, A Planet for Life Series (Delhi: Teri Press).
- Cashin, P., and C. J. McDermott, 2002, “The Long-Run Behavior of Commodity Prices: Small Trends and Big Variability,” *IMF Staff Papers*, Vol. 49, No. 2, pp. 175–99.
- Daviron, B., N. N. Dembele, S. Murphy, and S. Rashid, 2011, *Report on Price Volatility: A Report by the HLPE Project Team* (Rome: Committee on World Food Security, High Level Panel of Experts on Food Security and Nutrition).
- Deaton, A., and G. Laroque, 1992, “On the Behaviour of Commodity Prices,” *Review of Economic Studies*, Vol. 59, No. 1, pp. 1–23.
- , 1996, “Competitive Storage and Commodity Price Dynamics,” *Journal of Political Economy*, Vol. 104, No. 5, pp. 896–923.
- Fafchamps, M. 1992, “Cash Crop Production, Food Price Volatility and Rural Market Integration in the Third World,” *American Journal of Agricultural Economics*, Vol. 74, No. 1, pp. 90–9.
- Galtier, F., 2012, “Note sur la Crise Alimentaire en Cours au Sahel” (unpublished; Paris: Centre de coopération internationale en recherche agronomique pour le developpement [CIRAD]).
- Gilbert, C. L., and C. W. Morgan, 2010, “Food Price Volatility,” *Philosophical Transactions of the Royal Society of London Series B: Biological Sciences*, Vol. 365, No. 1554, pp. 3023–34.
- Jacks, D. S., O’Rourke, K. H., and J. G. Williamson, 2009, “Commodity Price Volatility and World Market Integration since 1700,” NBER Working Paper No. 14748 (Cambridge, Massachusetts: National Bureau of Economic Research).
- Poulton, C., J. Kydd, S. Wiggins, and A. Dorward, 2006, “State Intervention for Food Price Stabilization in Africa: Can It Work?” *Food Policy*, Vol. 31, pp. 342–56.
- Prakash, A., 2011, “Why Volatility Matters,” in *Safeguarding Food Security in Volatile Global Markets*, ed. by A. Prakash (Rome: Food and Agriculture Organization).
- Roache, S. 2010, “What Explains the Rise in Food Price Volatility?” IMF Working Paper 10/129 (Washington: International Monetary Fund).
- Sarris, A., 2011, “Options for Developing Countries to Deal with Global Food Commodity Market Volatility,” paper presented at the Annual Bank Conference on Development Economics, Paris, May.
- Voituriez, T., 2012, “Instability in Agricultural Prices: A Comfortable Truth,” *Towards Agricultural Change?* ed. by P. Jacquet, R. K. Pachauri, and L. Tubiana, A Planet for Life Series (Delhi: Teri Press).