

Grain Reserves and the Food Price Crisis

SELECTED WRITINGS FROM 2008–2012



INSTITUTE FOR
AGRICULTURE AND TRADE POLICY

Grain Reserves and the Food Price Crisis: Selected Writings from 2008–2012

Institute for Agriculture and Trade Policy

IATP sincerely thanks all the authors in this collection of writing on food reserves. We urge readers to continue to follow the writings and work of the included authors as efforts to combat food insecurity and volatile commodity markets continue.

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FOREWORD

IATP is pleased to present this reader of recent writings on grain reserves. Storing food in times of plenty for use in times of scarcity is a prehistoric idea that still has relevance and importance today. In 2009, IATP decided to renew and refocus its work on grain reserves in light of the 2007–08 food crisis and the link to significantly diminished food stocks for international markets. That work continues to deepen and expand, as a growing number of civil society organizations (CSOs), researchers and governments renew their interest in grain reserves as an important instrument to build food security.

There is a growing sense that the global agricultural marketplace has changed in recent years, and that these changes have led to dramatic increases in price volatility. Excessive speculation on commodity exchanges and disruptive weather associated with climate change are two factors affecting supplies and prices. The shift away from public stockholding to private control as multinational agribusiness companies control an ever larger share of global food supplies is another less discussed issue.

Grain reserves are a tool that can reduce excessive volatility in agricultural commodity markets. Low or uncertain stock levels are a necessary pre-condition for excessive volatility to occur; a transparent, predictable and accountable reserve is a powerful tool against such volatility. Reserves can also support more remunerative prices for producers; avert and respond to food emergencies; provide a market for small-scale producers; create a reliable source of food for social safety nets such as school lunch programs, and much more besides.

There are different kinds of reserves. These differences are too often left undefined when reserves get a mention in policy circles. There are emergency reserves versus those created to stabilize prices; regional versus national versus international reserves; virtual reserves versus physical stocks. These different kinds of reserves are linked in some ways, but also raise distinct kinds of challenges, for governance, composition, rules for stocking and release, and more. The context in which they operate is also important; emergencies in much of sub-Saharan Africa are recurrent and probable; for much of Asia, the risk of an emergency is much less, though individual countries face chronic food supply

instability and the number of people who are food insecure is much greater. Many of the countries that most need a national reserve are least able to afford one. The countries that can afford a reserve prefer to avoid the costs involved, relying instead on the private market.

There has been a clear shift in the policy debate surrounding grain reserves since 2009. It continues to prove very difficult to get some of the most influential members of the world's richest economies—the G-20—to allow an open debate on reserves. Officials in different policy institutions, governments and agribusiness repeatedly confirm that the question is a political “non-starter” for many countries. Yet interest in old and new experiments with reserves persists.

There is a growing sense that the global agricultural marketplace has changed in recent years, and that these changes have led to dramatic increases in price volatility.

Many African governments are interested in reserves as a way to lessen their dependence on external assistance, particularly on food aid but also on food imports. African countries' food import bill rose from \$20 billion in 2001 to \$33 billion in USD 2006—a 65-percent increase in just five years. Between 2006 and 2008, the food import bill jumped another 35 percent.¹ Other regions, too, particularly Asia and Central America have been exploring reserves. ASEAN+3 (Japan, South Korea and China) established a considerable emergency rice reserve in 2011, after a several-year pilot phase concluded.

Reserves have, in part, come back onto countries' policy agenda because some of the alternatives, including a reliance on

international trade to guarantee food supply, proved unreliable during the price spikes of 2007–08. Yet there is still no international platform that would allow a thorough debate of whether and how reserves could work. Reserves are like the orphan child at the banquet: not excluded from the guest list, but without a rich parent to bring her forward. Both the G-20 and the CFS discussed reserves in 2011. Both left small (very small) doors open to a further conversation. IATP hopes this reader can open the door wider on the debate, to allow an exploration of how reserves could better advance food security.

This collection provides an overview of recent writing on reserves, to point to work in progress, and to encourage a more open and rigorous debate about how reserves fit into

food security strategies, at the local, regional, national and international levels. IATP has sought input from a variety of sources to round out the information, and we thank the many contributors to this reader, and to others that gave their time and knowledge to putting the reader together.

1 Numbers from UN Economic Commission for Africa and FAO.

*-Sophia Murphy
Institute for Agriculture and Trade Policy, Minneapolis
June 2012*

I. Overview

Why We Need Food Reserves

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The Institute for Agriculture and Trade Policy (IATP) works locally and globally at the intersection of policy and practice to ensure fair and sustainable food, farm and trade systems.

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The recent food price crisis had devastating consequences for world hunger. During the peak of the crisis, from March 2007 to March 2008, the global price of rice increased 74 percent (most of that in a few weeks); the price of wheat more than doubled, rising 130 percent during the same period. Prices in local markets also rose dramatically.¹ More than 100 million people joined the ranks of the hungry, and although the numbers are now down from their peak, FAO estimates there are 925 million people living in chronic hunger today—well above the pre-crisis estimates of 875 million.

Food prices have risen sharply again in 2010 in local markets in South Asia and in parts of sub-Saharan Africa,² even though global harvests are at near-record levels. While farmers, traders and consumers all know that prices will fluctuate, it is the degree of volatility that is new, and the level of uncertainty around where trends are headed.

With hunger a persistent threat and extreme price volatility re-emerging, food reserves have received renewed attention in the global food security dialogue. Declarations issued by world leaders at the G-8 and G-20, as well as the 2009 Food and Agriculture Organization Summit on World Food Security have recognized the importance of food reserves. But there has been little movement beyond the rhetoric.

Why food reserves make sense

Food reserves are an ancient idea, responding to inherent characteristics of agriculture, particularly the presence of relatively constant, inelastic demand coupled with a much more variable short-term supply. Unregulated agricultural markets tend to produce a pattern of many years of declining prices interrupted by short, sharp upward spikes. Those price spikes cause a lot of distress to poor consumers, and only help farmers with a crop to sell when prices are high. Over time, the price spikes harm farmers by encouraging excessive investment in production, which in turn aggravates long periods of depressed prices. Food reserves can lessen the unwanted consequences of unstable agricultural markets.

Food reserves can be a valuable tool for improving access to, and distribution of, food. They can support farmers by helping them to predict their markets, and by countering concentrated market power downstream from production. They can contribute to local, national and regional markets, where resources are lacking. Reserve stocks can compensate for shortfalls in foreign currency (which make imports difficult), offset supply shocks or spikes in demand, and facilitate humanitarian response to food emergencies. Reserves can also help countries cope with climate change and its impact on food production and supply.

Reserves can be set up along different, but potentially complementary, lines:

- **FOOD EMERGENCY RESERVES** are intended to guarantee availability in situations of extreme weather or other disasters. Such reserves can help protect the most vulnerable populations.
- **PRICE STABILIZATION RESERVES** buy commodities when prices are low to reduce supply and sell when prices are high to keep prices in check. This can help protect farmers' incomes and mitigate the effect of steep price rises on consumers.

Why were food reserves abandoned?

Over the past 20 years, many governments around the world have either abandoned or dramatically curtailed reserve programs. There are several challenges:

1. **BUILDING A RESILIENT AND EFFECTIVE GRAIN RESERVE IS NOT EASY.** Reserves cost money. They also (by definition) distort markets and involve guesswork that does not self-correct, as a market might. If a reserve is poorly managed, it can exacerbate food security problems.
2. **ECONOMIC ORTHODOXY IS AGAINST MARKET INTERVENTIONS.** The profound shift in global economic policy starting in the early 1980s emphasizes keeping government intervention in markets to an absolute minimum. A public grain reserve falls squarely in the territory of “bad ideas” for those who do not trust the government to get economic management right.
3. **RESERVES HAVE TO OPERATE IN VARIED SOCIAL, POLITICAL, GEOGRAPHICAL AND ECONOMIC CONTEXTS.** Patterns of land distribution, dietary choices, the condition of the country's transportation and storage infrastructure, as well as how a country is connected to its neighbors and world markets, are all directly relevant to how best to structure a reserve and in determining where it might be most effective. There is no simple blueprint for a generic reserve.
4. **RESERVES DEPEND ON TRANSPARENT AND ACCOUNTABLE GOVERNANCE.** A reserve needs to be both well designed and well governed. Good people, properly trained and paid, strong oversight, clear rules and a well-functioning independent judiciary

are essential. It takes time and money to establish this oversight.

5. **BIG AGRIBUSINESS IS BETTER FINANCED, BETTER INFORMED AND POLITICALLY POWERFUL.** The resources and market information available to large agribusiness firms exceed that of most governments—particularly the governments of developing countries. The corporations involved in the grain trade play a vital role in many public policy interventions for food security, including shipping and delivering food aid. An effective system of grain reserves needs to protect its public policy space but work with the private sector—not an easy balance to achieve.

Why food reserves are making a comeback

The food crisis highlighted the inadequacies of relying on the market as the only strategy to address increasing uncertainty and volatile prices in agricultural markets. In addition to the age-old reasons mentioned above, which still hold true, there has been a marked renewal of interest in grain reserves for other reasons, including: countries' concern to maintain at least a minimal level of food security; the increasing incidence of food emergencies (linked to climate change, water scarcity, wars and natural disasters); the uncertain commitment to global markets exhibited by several key agricultural exporters during the most recent food crisis; and, the failure of the private sector to meet public needs in relation to stockholding and stock management.

In the face of uncertain production, not least linked to climate change, governments need to support local and regional food production strategies. A reserve can create a kind of guaranteed market that encourages investment in agricultural production and distribution systems. They can encourage innovation, including adaptation strategies in the face of climate change. Food security depends on a healthy mix of trade and own production; many of the poorest countries are far too dependent on uncertain imports to protect their people from hunger. Reserves can be part of the solution.

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Food Reserves in Practice

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· Growing government interest and support for food reserves has been evident in various international forums of late. At the same time, policymakers have been slow to act, reluctant to move away from twenty or more years of economic orthodoxy that has insisted supply shocks are best resolved through international trade alone. Many governments are exploring new ways to develop stronger and more resilient local, regional and national food systems. Food reserves can be a critical component of those reforms.

The local level

· All over the world, households that grow food will store what they can of their harvest to meet their own food needs, as well as what they can afford to hold to sell later in the year. The practice is particularly common in areas where production is very seasonal. Village or community reserves are constituted by pooling a portion of each family's reserves. The advantage of local reserves is that they are immediately accessible to the population and are made up of local products so that dietary habits are preserved, and dependency on products from outside the community is reduced. They can help reduce income fluctuation and thus make farms more resilient. Women in particular often play the central role in managing household and local food reserves, particularly in food preservation and processing, and vegetable gardening.¹

· In the Philippines, for example, the Asian Partnership for the Development of Human Resources in Rural Asia (AsiaDHRRRA) promotes community reserves as an important element of its efforts to strengthen local food systems.² AsiaDHRRRA works with communities to secure access to land, build rice banks and community nurseries, and raise awareness of traditional food preservation technologies to manage surplus production. They also support the establishment of food reserves, and encourage collective action and crop diversification for income generation and home consumption. This integrated approach has helped local farmers to reduce income variability and improve their farms' production and resilience.

The national level

· In addition to providing emergency protection, national reserves can help stabilize markets and provide incentives for local producers to invest in their farms. In Malawi, agriculture is the primary source of income for 85 percent of the population. With the election of President Bingu wa Mutharika in 2004, national food security has become a central policy objective. There has been considerable media coverage of the government's decision to distribute subsidized fertilizer and improved maize seeds. This has resulted in increased production and maize surpluses. However, rebuilding the strategic grain reserve is also a key component of Malawi's strategy for food security.

At one time, Malawi's Agriculture Development and Marketing Corporation (ADMARC) handled both commercial marketing and strategic grain management, but in 1999 the National Food Reserve Agency (NFRA) was created as an independent trust to oversee strategic grain management. In its early years the NFRA held less than 200,000 metric tons (MT), dropping below 60,000 at the behest of the International Monetary Fund in 2001. The low level of reserves—and insufficient financial resources to buy maize on regional and global markets during a period of high prices—contributed to the famine in 2002.³ With this experience and the 2008 food price crisis in mind, the Mutharika administration chose to increase national physical reserves rather than rely on imports. New storage silos are being built throughout the country to maintain 400,000 MT in the reserve system.

Decisions on when to release stock from the reserves are made by a stakeholder committee convened by the Ministry of Agriculture and Food Security. A request to draw down a specific amount must be submitted by the government or an organization such as the World Food Program. The full committee must then agree on the decision and the petitioner must commit to replenishing the stocks if the petition is granted. According to Victor Mhoni, National Coordinator of Malawi's Civil Society Agriculture Network, the process can be time consuming and needs to be made more efficient if it is to avoid exacerbating food emergencies.

While the investment in production, coupled with the creation of a reserves system, has increased the volume of food available, more work needs to be done to improve distribution. The greatest challenge now lies in getting maize from surplus regions to deficit regions. ADMARC could be well suited to address this challenge since it has storage facilities in all districts and has transportation vehicles. The Civil Society Agriculture Network and others are pushing the government to improve ADMARC's capacity to meet the distribution challenges. They are also advocating that the government begin buying early in the harvest to stabilize maize prices during both the main harvest and into the lean season.

The regional level

Food reserves at the regional level allow for interplay between national and regional reserves. Many food systems depend on weather patterns and patterns of natural resource distribution that do not respect political borders, making regional collaboration essential. Public monitoring of national reserves at a supranational level can

help prevent governments monopolizing reserves for short-term political gain. Other potential advantages of regionally coordinated reserves include cost savings through economies of scale and enhanced price stabilization due to the wider scope of the supply and distribution system.⁵

Building on a pilot project from 2004–07, the East Asia Emergency Rice Reserve (EAERR) scheme promotes regional cooperation among the 10 Association of South-east Asian Nations (ASEAN) member states, plus China, Japan and the Republic of Korea to provide food assistance and strengthen food security in emergencies caused by disasters, and for poverty alleviation purposes.⁶ There are proposals for the region's major producers such as Thailand and Vietnam to donate about 90,000 MT, while Japan, China and South Korea would contribute a combined 700,000 MT.⁷

Riza Bernabe, from the Asian Farmers Association for Sustainable Rural Development comments, "As they often say, the devil is in the detail. It is important to ensure that there are clear policies not only for earmarking rice pledges or contribution to the reserves, but even more so on how rice should be accessed and distributed to requesting countries. These decisions need to be developed with input from CSOs if we are to ensure that the reserve mechanism will be used mainly as a tool to promote sustainable food security, and not merely to dump rice into the market."

The global level

A global food reserve system could play an important role in complementing local, national and regional systems. While it is vital to increase local food production in developing countries, there will be times when it will be important to draw from other countries' stocks to confront regional crop failures, a situation that could become more frequent as climate change creates new challenges. Together, Argentina, Australia, Brazil, Canada, China, the European Union, India, Russia, Ukraine and the United States account for 60 percent of the world's arable land. While investments in agriculture can boost production, those countries will likely continue to produce the largest volume of food for the foreseeable future.⁸ Holding some level of stocks in the big exporting countries also has cost and efficiency advantages, because the climates tend to be favorable in these centers, and the infrastructure is generally already in place. The establishment of global food reserves, whether through physical stocks or "virtual" commitments to deliver food in times of crisis, will have to answer difficult questions as to the most appropriate form of governance.

These efforts to improve coordination of food supplies and prices must be accompanied by regulation of financial markets to prevent speculators from taking advantage of crises like the recent Russian wheat crop losses to destabilize commodity markets. Taken together though, they have the potential to promote sustainable, resilient and equitable food systems around the world.

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WTO Rules and Food Reserves

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World Trade Organization (WTO) rules governing agriculture do not actually make the operation of a grain reserve impossible, but they do create uncertainties. It is time for governments to think again about the framework for agricultural trade rules.

1. Financing a reserve

It costs money to establish and run a public reserve. The Agreement on Agriculture (AoA) has different rules for different kinds of public spending on agriculture. Its starting assumption is that public support to agriculture should be provided in ways that do not distort trade or production. The rules do not accommodate market failures inherent to agriculture, and they only address some of the distortions introduced by various actors in the market (i.e., the rules focus on distortions made by governments but ignore those evident in the private sector). But the AoA rules do allow certain exceptions, which in practice open the possibility of significant public investment in agriculture.

The exceptions include programs considered too small to matter (under the so-called de minimis requirements), production-limiting programs and an allowance for other trade-distorting support that was based on how much a country was spending in the first place. The AoA creates both higher allowances and more exceptions for developing countries. Measures aimed at encouraging agricultural and rural development, or that target low-income or resource-poor producers, for example, are allowed for developing countries. Establishing and operating a reserve could be done in such a way as to meet these requirements.

The de minimis rules are calculated based on the size of a country's agriculture sector. For example, in 2009 Mali had a GDP of US\$15.52 billion, 45 percent of which (US\$7 billion) was generated from agriculture. Under the de minimis rules, Mali could spend nearly US\$700 million (10 percent of its total agricultural production) on agriculture. That would be nearly half of the government's annual budget.

Food reserves wouldn't necessarily all be held in physical storage. They could also include a land set-aside program to hold productive capacity in reserve. Under the AoA as it is now, payments to farmers to limit production are not constrained. The proposals now provisionally accepted by WTO members as part of the Doha negotiations propose a cap on spending on such programs. A cap would not hurt existing programs, but might pose problems should governments decide to reintroduce set-asides in some form in the future.

The primary producers for export of many grains are developed countries—the United States for wheat and maize; France, Australia and Canada for wheat. If these countries were to jointly manage a global reserve, land set-aside policies could again be important. These, and the public payments needed to operate the reserve, would represent spending that would demand modification of the existing AoA rules and likely abandoning the revisions proposed in the Doha talks.

A further category of exceptions to public spending on agriculture is found in Annex 2 of the AoA (the Green Box), which allows governments to maintain public stocks, so long as the stocks are bought at “current market prices.” If the government is a major buyer or seller (or both) then its price may be the market price. This category does not count the other costs associated with a price support program, such as storage costs. It only counts the gap between government-determined and market prices.

2. Governing the reserve

If the country creates a company to oversee the reserve, that State-Trading Enterprise (STE) would face specific regulations under WTO law that require it to operate by purely commercial criteria. The rules concerning government procurement could also affect the management of a public reserve.

The company might not be required to abide by the WTO limits if the grain reserve does not involve international trade. Yet even without engaging directly in trade, if the reserve is a big buyer and seller in the domestic market, it is likely that existing and would-be trade partners will monitor the reserve’s behavior very carefully. While the rules put the onus on STEs to operate from purely commercial considerations, it is possible to argue that the kinds of objectives a government might have in mind, including the need to limit price volatility, are also commercial considerations that would help to keep risk to manageable levels.

The Doha proposals on STEs would curtail future attempts to establish a public monopoly over exports among any large exporter. They do not preclude the establishment of a grain reserve. There are also proposals to create exemptions for STEs in developing countries that have less than 5-percent share of world trade.

3. Price Interventions

To limit price volatility, a reserve can use stocks to affect supply by buying and releasing stock. Trade policy is also important in the management of a price band: The point of tariff quotas, for example, is to control supply on domestic markets through the application of tiered tariffs. If a reserve is intended to limit downward pressure on prices, then its administrators need to operate a price band, under which tariffs are automatically applied (or stocks are acquired or released) when prices stray from determined floors or ceilings. Price bands are illegal under WTO law. But they are not impossible to operate on a de facto basis.

The AoA allows WTO members to continue to operate more than one tariff level for the same product because of the gaps that exist between the maximum bound tariffs and the actual applied levels. As long as a country was careful to bind its tariff above the level usually applied, some room to maneuver is automatically created. However, a set tariff does not vary according to price (as a variable levy would). Under the rules, a country may not raise the tariff above the bound level and any change to the applied level has to be notified. The point of the WTO rules is to eliminate the gap between bound and applied tariffs, though the politics have so far made that impossible. Such an ad hoc system, however, does little to advance either public or commercial interests. Allowing a more interventionist tariff system, while guarding against erratic or short-term political interests, would be both doable and desirable.

4. Managing volumes

WTO rules prefer markets to respond to price signals rather than volume levels. At the WTO, volume-based variable levies are illegal and volume-based tariffs have largely been replaced with ad valorem (value-based) equivalents. A grain reserve establishes a physical stock of food. That grain has to be bought and sold to keep the stock fresh, to avoid waste and to ensure appropriate levels are maintained. Governments need policies to decide the conditions under which grain from the reserve is released and how it is disposed of or sold.

Managing stock rotation (and total volume) is one of the biggest challenges a reserve will face. It is something an open market does very well, making a public reserve look clumsy by comparison. But the market ignores so-called externalities that should in fact be at the top of a government’s priorities. These include the costs of environmental pollution, the limits on natural resources and the importance of meeting demand that is not backed by purchasing power.

Time for a new agricultural trade framework?

The AoA rules reflect their origins by focusing on curbing over-production—an issue that is still relevant, but hardly the central challenge confronting the vast majority of developing countries.

Trade negotiators should amend the AoA so as to establish a framework of rules that:

- Allows the operation of price bands for food under multilaterally agreed norms;
- Explicitly acknowledges the need to stimulate production in many developing countries;
- Acknowledges the inherent weaknesses of the private sector in many developing countries and the concomitant importance of public authorities;
- Tackles the problem of unduly concentrated market power in global commodity markets;
- Recognizes the specificities of agricultural economics and the limitations of free-trade economics as they apply to the sector;
- Gives a clear and unambiguous place for governments' obligation to realize the universal human right to food, including the need to regulate markets if food security is thereby enhanced;
- Allows governments to develop policies that encourage surplus capacity to produce food, but that keeps that surplus in reserve rather than fully exploited.

This summary is drawn from "Trade and Food Reserves: What role does the WTO play?" by Sophia Murphy, Institute for Agriculture and Trade Policy/Misereor/Heinrich Böll Stiftung/EcoFair Trade Dialogue, September 2010.

Grain Reserves: A Smart Climate Adaptation Policy

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Consider these four developments: 1.) Climate change is having a profound effect on current and anticipated food production; 2.) Those effects are expected to be greatest in some of the world's most impoverished regions, particularly in the countries that sit around the equator; 3.) The anticipated effects of climate change, coupled with the already evident disruptions to natural phenomena, including rainfall, wind patterns and storm activity, exacerbates the inherently volatile nature of commodity markets; and 4.) Climate change is occurring at a time of great uncertainty in the world of food and agriculture because of actual and anticipated crises related to the depletion of freshwater, oil and soil fertility.

The recent estimate by the U.N. Food and Agriculture Organization (FAO) that agriculture commodity prices are likely to rise in 2011 and food import bills are expected to surpass the \$1 trillion mark is another stark reminder of how vulnerable the global food system is today to any disruption.¹

In this context, climate change negotiators need to be talking to their counterparts in the world of food and agriculture—not just agriculture ministries, but also ministries of health, rural development and, where they exist, ministries of food. Where governments are also donors, they need to talk to all the agencies involved in investing in agriculture as well. Agricultural investments that ignore climate change risk wasting money and could exacerbate the climate crisis (agriculture has been identified by the Intergovernmental Panel on Climate Change as a major contributor to greenhouse gas emissions). Climate change policies and projects that do not understand the challenges confronting food and agriculture could likewise do more harm than good.

Climate change destabilizing agriculture

In the past 20 years, the number of recorded natural disasters has doubled from roughly 200 to over 400 a year. The U.N. estimates that nine out of ten of these natural disasters are linked to climate change.² The U.S. National Center for Atmospheric Research released a report in October 2010 that shows the percentage of the earth's land area facing serious drought more than doubled between 1970 and the early 2000s.³

The implications for agriculture are consistently sobering, not to say alarming, even allowing for the uncertainty that inevitably accompanies numbers generated from models and probabilities. An article from Environmental Research Letters by Wolfram Schlenker, a professor at Columbia, and David Lobell, from Stanford, suggests climate change will cause medium term production drops in sub-Saharan Africa of, on average, 22 percent for maize (corn), 17 percent for sorghum, 17 percent for millet, 18 percent for groundnuts and 8 percent for cassava.⁴

These numbers in any context would demand urgent attention. But in the context of sub-Saharan Africa, where agriculture in some countries is upwards of 40 percent of GDP, the implications are very serious indeed. Agriculture accounts for 80 percent of employment in some of these countries, leaving most of the population either directly or indirectly dependent on agriculture for their survival. By way of comparison, in the U.S., agriculture is 1.2 percent of GDP; in Brazil, it's 6.1 percent.

Here is how analysts at the World Food Program summarized the situation in a background paper written for the FAO's Committee on Food Security:

By 2015 the number of people affected by climate related disasters is expected to reach 375 million per year. By 2050 the risk of hunger is expected to increase by 10 to 20 percent while the number of malnourished children is expected to increase by 21 percent (or 24 million children) more than without climate change.⁵

Grain reserves help stabilize the food supply

Given the challenges posed by climate change, here is an idea that makes a lot of sense: grain reserves. Why? Because grain reserves are a relatively cheap public insurance policy in the face of tremendous uncertainty, when the risks of failure include starvation. Governments can use a reserves policy to invest in storage and transportation infrastructure; to work with the private sector to cover gaps and market failures; to provide farmers with guarantees that encourage investment; and to increase transparency to discourage hoarding and speculation.

Confronted with the reality of climate change, governments must take a smarter approach towards managing our food supply. Grain reserves have an impressive pedigree. For thousands of years, households and governments have stored some of each harvest as an insurance against the uncertainties of the next. Food reserves respond to inherent characteristics of agriculture, particularly the presence of relatively constant, inelastic demand coupled with much more variable short-term supply. Unregulated agricultural markets often over-produce, leading to a pattern of many years of declining prices, interrupted by short, sharp, upward spikes. Food reserves can lessen the unwanted consequences of unstable agricultural markets.

There are many models to choose from—indeed, most governments have some form of reserve in place—though most have been scaled back considerably since the days when food reserves were the norm. In the past, some of the major exporting countries (notably Canada and the U.S., in the case of wheat) held reserves that effectively both established a price floor for their growers and gave wheat importers confidence that the grain supply was safe, even if one year's harvest was poor.

In other cases, national governments have operated domestic focused reserves. Many such national reserves in sub-Saharan Africa were troubled by poor finance and oversight. Even those that worked relatively well were dismantled over the 1990s, largely because they did not fit in the model of economic liberalization that dominated donor thinking at the time. But there are compelling reasons to consider their reestablishment given the vital nature of food security, the effects of climate change on agricultural production, and the failure of purely market-based approaches to provide an adequate and appropriate food supply and distribution. Countries can learn from their experiences in establishing independent and accountable central banks, which in the past were similarly crippled by poor governance and a lack of accountability. They can also benefit from the dramatic changes in information technology, communications and transportation to build reserves that are flexible, and that are responsive to change in market conditions.

Gaining momentum

After the last food price crisis in 2007-08, governments and civil society networks engaged in food policy began to reconsider grain reserves. Reserves were referenced in the 2009 L'Aquila G-8 declaration, and then the U.N.-led Comprehensive Framework for Action on the Global Food Crisis. In March 2010, Brazil, Russia, India and China (the BRIC nations) agreed to support the establishment of a system of national grain reserves. In October, members of the Association of South East Asian Nations (ASEAN) signed a new agreement to coordinate an emergency rice reserve among their membership and with non-members South Korea, Japan and China. The recent resurgence in food prices has added urgency to this debate: governments must move beyond affirmations of the importance of reserves to actually establishing them.

The discussion on agriculture in the context of climate change is relatively new and still not well developed. The focus has been almost entirely on what happens in the field,

and how to minimize the practices that are most closely associated with greenhouse gas emissions. But climate change is not just about mitigation—with the effects already making themselves felt, it must be about adaptation as well. Grain reserves are an important policy tool for governments to be smart about the adaptation challenges ahead.

Governments are confronted with really big challenges in agriculture. But the need to produce enough food while mitigating climate change is also an opportunity for new ideas. Reserves should be on that list—an ancient idea, ready for new challenges.

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Grain Stocks and Price Spikes

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About the organization

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Summary

This paper reviews the role stocks played in 2007/08 spike in world food prices and their potential for mitigating future food price volatility. It reviews available information on cereals stocks internationally; considers the role of stocks in the formation of the price spike; discusses historical experiences of price stabilisation schemes involving buffer stocks; and assesses current proposals to stabilise prices internationally. The data used come from published statistics, mainly those from FAO and USDA; academic and professional literature; and from interviews with key informants at FAO, the grain trade, and the International Grains Council (IGC).

Cereals stocks

Few countries collect data on stocks held by private farms and firms; hence most data are inferences from reported levels of production, trade and consumption. Since the data on these last three variables are subject to error, then estimates of stocks as residuals must be subject to wide confidence limits. Trends may thus be more reliable than actual levels reported. This is more than an academic point: at the turn of the century inferred Chinese stocks were revised upwards by 70M tonnes when it became clear that previous estimates had been too low.

Currently around 400M tonnes of cereals are in stock, down from more than 500M tonnes in the 1990s. The bulk of stocks are held in the United States and China, although Chinese stocks are effectively largely irrelevant to global markets since China trades very little grain and the stocks are meant to insure against domestic shortages and only exceptionally released on to world markets.

Stock-to-use ratios matter more than absolute levels. Looking at grain stocks since the early 1960s three patterns can be seen:

- China has consistently kept stocks proportionately much larger than the rest of the world, with ratios exceeding 70% for the key rice crop in the 1990s;
- During the last fifty years, world stock ratios were allowed to decline until the early 1970s, were then built up after the 1973/74 price spike, and then reduced after the turn of the new century; and,
- The low points in stocks-to-use ratios tend to coincide with price spikes. Three low points are especially evident for the wheat ratio: in the early 1970s, mid-1990s and in 2007/08. All three points were moments when cereals prices spiked, albeit in the mid-1990s by less than the events of 1973/74 and 2007/08.

Stocks played two roles in development of the price spike. In the years following 2000 falling ratios signalled the extent to which growth of demand for cereals was exceeding growth of supply. Once stocks had been reduced to a minimum threshold—that of the inventories necessary to permit grain trading and processing—then their power to cushion any short term shocks was gone. When, in 2007, harvests failed and the oil price reached levels that made biofuels economically attractive, all adjustment had to be on prices. And once these rose quickly and far enough, panic led to export bans, restocking—apparently particularly for rice—and speculation that exacerbated the initial price rises. Hence stocks, and the factors that led to changing stock levels, were fundamental to the price spike.

Previous attempts to stabilise prices

Examples include the Wheat Agreements of the 1950s and 1960s, and the commodity agreements set up for some tropical crops and minerals in the 1960s that operated until the 1990s. By and large, these schemes only worked when supply and demand would have led to stable prices in any case. When they would not, the schemes failed—and sometimes catastrophically so.

After the last major food price spike in 1973/74 negotiations to establish global grain stocks to prevent such a spike reached an advanced stage before foundering on critical elements of the financing and management of the reserves.

Current proposals

At least eleven proposals have been put forward to prevent the price spike. They can be grouped as follows:

■ Storage

- emergency reserves for food aid,
- internationally co-ordinated public grain reserves,
- regional and national stocks;

■ Virtual and para-reserves

- virtual reserve to prevent speculative attacks in futures markets,
- diversion of grains from animal feed and industrial uses when price spikes are forming;

■ Information and co-ordination

- More and better information on storage;
- International food agency along the lines of the IEA to report on stocks and cooperate to ensure supplies in tight markets, and,

■ Trade facilitation

- International grain clearing arrangement
- Prevention of export bans
- Food import financing facility

■ Establish production reserves.

They vary in terms of ambition and scope, technical challenges, the degree of international cooperation required, and their cost. Some are quite novel, others are variants on measures that have been taken in the past.

This paper reviews the proposals and indicates the advantages and drawbacks of the schemes—summarised in Table 3.1. Arriving at a firm judgment on the better options is beyond the scope of this paper: that would require detailed analysis of the proposals, and for some of these this would be a substantial task.

That said, the apparent weight of evidence and opinion would indicate the following judgments:

- An emergency food reserve and financing facility for the World Food Programme to ensure continuity of food aid and the ability to respond to emerging needs seems justified, although this does not deal with price spikes;
- It is far from clear that a system of co-ordinated public grain reserves could be made to work and would not deter private storage;
- Regional and national stocks may be justified in particular (and probably national) circumstances, but otherwise seem costly;
- A virtual reserve might be addressing a problem that does not exist. There are serious doubts as to its feasibility;

- Diverting grains from animal feed and industrial use, through use of options, could be a cheaper way to obtain food to be channelled to poor and vulnerable people when price spikes are forming. Given administrative costs it may only be attractive where governments or agencies are committed to delivering food to the vulnerable;
- Proposals for more reporting of stocks and co-ordination could be useful. Some are skeptical that reporting of stocks could be improved given that so much is held privately and stock holders would have little or incentive to reveal what they hold; but given that some countries are able to collect reasonably detailed data, this cannot be so difficult if the will were there. These ideas look to be things that FAO might lead or carry out;
- There is plenty of support for negotiating under the WTO to have export restrictions banned or severely curtailed;
- An international clearing house for grain trading is intriguing, but perhaps needs more work on the detail to explore its feasibility and desirability;
- The proposed food import finance facility seems to replicate an existing IMF scheme that needs to be made more agile, a task that the Fund apparently has in hand; and,
- Production reserves would produce food too late to prevent spikes and potentially act procyclically, driving prices down when they are already falling

This suggests that the proposals for an emergency reserve and outlawing export bans deserve pursuing. The same may be said of trying to get better information on stocks. For some countries and agencies, the proposal to see how options and other contracts might be used to divert grain from other uses to food may be useful. More detail is needed on the international grain clearing house. Ideas about an international food agency and a food import financing facility can be seen as calls for FAO and IMF, respectively, to work more effectively on their mandates.

Implementing Physical and Virtual Food Reserves to Protect the Poor and Prevent Market Failure

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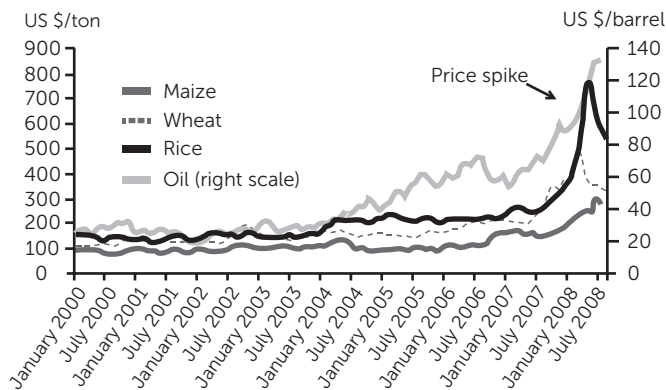
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<http://www.ifpri.org>.

The 2007–08 international food price crisis caused hardship on a number of fronts. The steep rise in food prices led to economic difficulties for the poor and generated political turmoil in many countries. The crisis could also result in long-term, irreversible nutritional damage, especially among children. There is a global interest in preventing such events from recurring.

The price crisis was triggered by a complex set of long-term and short-term factors, including policy failures and market overreactions. One important factor in the crisis was the entry of significant financial resources into futures markets, including food commodity markets, which contributed to a price spike during the first six months of 2008. This episode highlights the need to modify the architecture of international financial and agricultural markets to address the problem of price spikes, especially their effects on the livelihoods of the poor.

Although a set of guiding principles for regulating agricultural and commodity futures markets should be developed and recent inappropriate trade policy instruments such as export bans should be reviewed, these actions are not sufficient to avoid extreme price spikes and to ensure that the world can respond to emergency needs for food. We propose two global collective actions to meet these goals. First, a small physical food reserve should be established to facilitate a smooth response to food emergencies. Second, an innovative virtual reserve should be set up to help prevent market price spikes and to keep prices closer to levels suggested by long-run market fundamentals like supply and demand. This brief offers some specifics on implementing a proposal described in our earlier IFPRI policy brief titled Physical and Virtual Global Food Reserves to Protect the Poor and Prevent Market Failure (June 2008).

Price instability is a general feature of agricultural markets. The proposals made here are designed not to stabilize prices generally, but to prevent damaging price spikes. The proposed actions will entail costs, but the modest costs of the required organizational elements must be balanced against the benefits of more effective international financial architecture. These benefits will include prevention of economic hardship, improved market efficiency, stronger incentives for long-term investment in agriculture, and prevention of political instability.

Figure 1—Surge in cereal and oil prices

Source: FAO (Food and Agriculture Organization of the United Nations), International commodity prices database, <http://www.fao.org/es/esc/prices/PricesServlet.jsp?lang=en>, accessed 2008.

Several statistical tests were conducted to determine the role of speculative activity in pushing up commodity prices. The results suggest that speculation might have been influential (see box on page 2 entitled “On Speculation” and the IFPRI issue brief *When Speculation Matters*, kind of market failure are needed. Figure 1— Surge in grain and oil prices by Miguel Robles, Maximo Toreo, and Joachim von Braun, Washington, DC: International Food Policy Research Institute, 2009). Appropriate global institutional arrangements for preventing this kind of market failure are needed.

Table 1—Growth in the volume of globally traded grain futures and options, May 2007–May 2008

Commodity	Growth in traded volume (%)	
	Futures	Options
Maize	0	13
Soybeans	40	69
Soybean oil	46	69
Wheat	17	45
Rough rice	48	41

Source: Chicago Board of Trade, 2008

The Role of Speculation in the Price Spike

Changes in supply and demand fundamentals cannot fully explain the recent drastic increase in food prices. Rising expectations, hoarding, and hysteria also played a role in the increasing level and volatility of food prices, as did the flow of speculative capital from financial investors into agricultural commodity markets. As a result, a price spike greater than what is explainable by fundamentals occurred during the first six months of 2008 (Figure 1).

The flow of speculative capital from financial investors into agricultural commodity markets was significant. From May 2007 to May 2008, the volume of globally traded grain futures and options increased substantially (Table 1). Another indicator of speculative activity—the ratio of the monthly volume of futures trading to open interest—also increased substantially. Open interest describes the total number of futures contracts of a given commodity that have not yet been offset by an opposite futures contract or fulfilled by delivery of the commodity. A speculator taking opposite positions in the market within days or weeks will generate an increase in monthly registered volumes but little change in monthly open interest. Therefore, changes in this ratio should capture changes in speculative activity. In 2008, soybean and rice ratios of futures to open interest were increasing at 27 percent and 19 percent, respectively, as wheat ratios continued to grow at 19 percent and maize ratios declined slightly. In contrast, in 2005 and 2006 at least three commodities’ ratios were declining on average.

The Proposed New Institutional Design

To cope with the market failures revealed by the food price crisis, there are two traditional options. The first is to build up a significant physical, public, globally managed grain reserve. In a globalized world, however, the scale of reserves required under this option would make storage costs excessive. A physical reserve is thus not appropriate as a major global initiative, but only as a minor one to address the need for smooth emergency operations. One way to minimize storage costs could be an internationally coordinated arrangement for shared reserves stored at the country level, as proposed by World Bank chief economist Justin Lin. Such an institutional design could be appropriate for the small physical emergency reserve proposed here.

The second option is to change the regulation of commodity exchanges to limit the volume of speculation versus hedging, to make delivery on contracts or portions of contracts compulsory, and to impose capital deposit requirements when each futures transaction is made. Difficulties could arise, however, in walking a line between ineffective regulations and overzealous ones. Market regulation also raises political economy concerns: regulatory measures could benefit relatively small groups, certain groups may

capture control of the regulatory agency, regulatory agreements may not be completed, and countries may lack the institutional capacity to implement and enforce the regulatory measures. Although some improvement in regulation is called for, regulating commodity exchanges in harmony across the globe appears too complex a collective action problem given very different country circumstances.

The two global collective actions we propose—a small, independent physical emergency reserve and a virtual reserve and intervention mechanism backed up by a financial fund—would avoid these problems while ensuring that the world can respond to emergency needs for food and prevent extreme price spikes.

The independent emergency reserve. A modest emergency reserve of around 300,000–500,000 metric tons of basic grains—about 5 percent of the current food aid flows of 6.7 million wheat-equivalent metric tons—would be supplied by the main grain-producing countries and funded by a group of countries participating in the scheme. These countries would include the Group of Eight Plus Five (G8+5) countries (Canada, France, Germany, Italy, Japan, Russia, the United Kingdom, the United States, Brazil, China, India, Mexico, and South Africa) and perhaps others. This decentralized reserve would be located at strategic points near or in major developing-country regions, using existing national storage facilities. The reserve, to be used exclusively for emergency response and humanitarian assistance, would be managed by the World Food Programme (WFP). The WFP would have access to the grain at pre-crisis market prices to reduce the need for short-term ad hoc fundraising. To cover the cost of restoring the reserve to its initial level (that is, the difference between the post-crisis price and the pre-crisis price times the quantity of reserves used by WFP), an emergency fund should be created and its level maintained by the participating countries. The fund should be accompanied by a financing facility that the WFP could draw upon as needed to cope with potentially increased transport costs, as experienced in the 2008 crisis. This arrangement could also be defined under a newly designed Food Aid Convention.

THE VIRTUAL RESERVE. The virtual reserve and intervention mechanism would have four major components (see Figure 2).

1. The Club. The virtual reserve would be implemented as a coordinated commitment by the member countries of the Club, which may consist, for instance, of the G8+5 plus some other major grain-exporting

countries (such as Argentina, Thailand, and Vietnam). Each country would commit to supplying funds, if needed, for intervention in the futures market. Agreement on the arrangements for the Club will not be easy and may require a high-level United Nations task force to analyze the way forward. Yet similar institutional arrangements have been made in the past; examples are the International Fund for Agricultural Development (IFAD) and the Food Aid Convention (FAC). IFAD was established as an international financial institution in 1977 as a major outcome of the 1974 World Food Conference in response to the food crises of the early 1970s. The FAC, first signed in 1967 and renewed five times, is the only treaty under which signatories have a legal obligation to provide international development assistance.

2. The fund. The fund would normally consist not of actual budget expenditures, but of promissory, or virtual, financing by the Club. The fund would be drawn upon by the high-level technical commission only when needed for intervention in the futures market (much previous evidence has shown a link between futures and spot markets—see citations at <http://www.ifpri.org/pubs/bp/bp010reading.pdf>). Preliminary estimates show that for the virtual reserve to be a credible signal, the fund should be US\$12–20 billion. A fund of this size might cover 30 to 50 percent of normal grain trade volume. Determining the exact size of this fund will require further analysis, however, because commodity futures markets allow for high levels of leverage.

On Speculation

Our analysis tested to what extent a series of indicators for speculative activity can help forecast spot price movements. The Granger causality test—which determines whether past movements in one variable can help explain current movements in another one—was applied to each agricultural commodity. The results show that the ratio of monthly volume to open interest and the ratio of noncommercial long positions to total long positions in futures contracts has an influence in forecasting price movements for wheat and rice. When the same ratio for short positions was analyzed, there was additional evidence that speculation affects prices, with significant results in maize and soybean markets. There is evidence, therefore, that speculative activity partly explains the price spike since January 2008 (see the IFPRI issue brief *When Speculation Matters*, www.ifpri.org/pubs/ib/ib57.asp).

3. The global intelligence unit. The global intelligence unit, to be established by the Club on a permanent basis, would have three main roles:

- Forecasting prices in the medium and long run. The unit will forecast prices by combining an assessment of the fundamentals component (supply and demand factors) with a medium-term to long-term financial model in which the spot price of a commodity at a certain time is decomposed into stochastic factors. The unit would pay special attention to key indicators of how well commodity exchanges are functioning, such as divergences between spot prices and futures prices. Using models that capture fundamental forces in price determination as well as stochastic factors, the unit will incorporate the impacts of market intervention policies.
- Designing and maintaining a dynamic price band system. The unit would design a fairly widely defined price band based on the forecasting model.
- Triggering interventions. The unit would trigger the alarm to the high-level technical commission that prices are significantly outside their estimated price band (that is, prices are approaching a spike) based on the dynamic price band system. The high-level technical commission would then decide whether to approve sales in the futures markets until a speculative attack is largely eliminated. The recommendation of the intelligence unit would include the price at which sales of futures should be made and the duration and frequency of the operations.

The intelligence unit would be part of an existing multilateral institution with a small team of full-time staff. Ideally, the intelligence unit could be built within an institution that already has the long- and medium-term modeling infrastructure for price forecasting. It would also draw on existing analytical capacity in specialized organizations (such as FAO, the U.S. Department of Agriculture, IFPRI, and the World Grain Council).

4. The high-level technical commission. The high-level technical commission, which would be appointed by the Club on a permanent basis, would make the official decision to intervene in the futures market once the

triggers are activated by the intelligence unit. This commission will need to have full autonomy.

How the Intervention Mechanism Will Operate

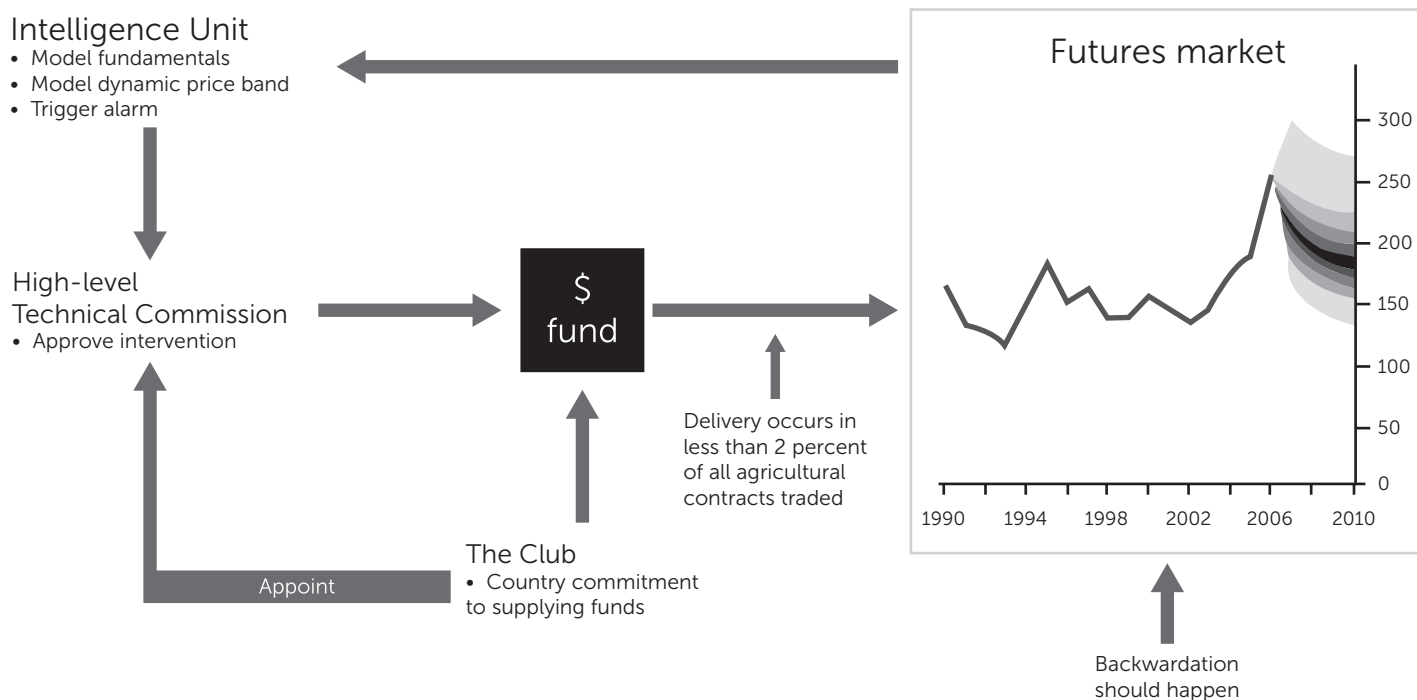
The intervention mechanism will be two-pronged. First, and perhaps most important, the global intelligence unit will announce price forecasts and specify the price band. This announcement will be a signal—or a threat—to speculators that intervention is likely if futures prices exceed the defined upper limit of the price band. Moreover, the announcement will specify a confidence interval for the upper limit to increase the risk for potential speculators.

Second, if, despite the signal, there is evidence of an emerging price spike, the global intelligence unit will alert the high level technical commission that prices are significantly above their estimated dynamic price band based on market fundamentals. The autonomous technical commission will then decide whether to intervene in the futures market. This intervention would consist of executing a number of progressive short sales (that is, selling a firm promise—a futures contract—to deliver the commodity at a later date at the specified price) over a specific period of time in futures markets at market prices at a variety of different future positions until futures prices and spot prices decline to levels within the estimated price bands. The global intelligence unit would recommend the price or series of prices to be offered in the short sales.

This increase in the supply of short sales will reduce spot prices and should make speculators move out of the market—in other words, a backwardation will be created (the situation in which, and the amount by which, the price of a commodity for future delivery is lower than the spot price or a far future delivery price is lower than a nearer future delivery price). Moving speculators out of the market will minimize the potential second-round effects of this intervention given that spot prices will return to being consistent with fundamentals, and therefore the lower spot prices should not result in the accelerated use of available supplies.

All futures contracts are ultimately settled either through liquidation by offsetting purchases or sales (the vast majority of agricultural futures contracts are settled this way) or through delivery of the actual physical commodity. The virtual fund will thus come into play only if there is a need to realize the futures sales, in which case the fund will

Figure 2—Institutional design behind the virtual reserve



Source: Joachim von Braun and Maximo Torero

be used to obtain the necessary grain supply to comply and calm the markets. Usually, this action would not be necessary and the whole operation would stay virtual. Questions will remain about the price, the amount of short sales, and the duration of the intervention in the futures markets, and answering them will require political consultation and continuous monitoring and research. If the system governing the virtual reserve is established by large grain-exporting countries, there would be no temptation to aim for particularly low food prices that would undermine producers' incentives.

The innovative concept behind the virtual reserve is the signal that it gives to markets, including speculators. Its presence alone is likely to divert speculators from entering this market. Nonetheless, the commission must be ready to trade grain when necessary and to assume the costs if in the future it must buy back contracts at a higher price than it sold them for.

The global intelligence unit has an important and challenging role in price forecasting. To be a credible basis for market intervention, price forecasts must contain some new knowledge, widely regarded as credible when released, that is not already reflected in the structure of market

prices. This new knowledge consists of the combination of the fundamentals component (that is, supply and demand factors) and a medium- to long-term financial model that captures stochastic factors.

The physical and virtual reserve system should be continuously monitored and evaluated for effectiveness. A comprehensive cost-benefit assessment of the system must go beyond agricultural markets to include food security and poverty considerations.

Final Considerations

The major goal of the proposed virtual reserve is to establish a mechanism that will, through market transactions, minimize any speculative attack on food commodity markets to avoid price spikes in the future. It would not interfere with market fundamentals, but rather enhance long-term efficient supply response and investment in agriculture. A virtual reserve system would also help prevent the kinds of harmful ad hoc trade policy interventions, such as export bans, high export tariffs, and high import subsidies, that have been both a cause and an effect of the recent price crisis.

Neither the poor nor governments can afford excessive speculation in food markets. There is clearly a need for global collective action to facilitate well-functioning grain markets. The virtual reserve concept is a viable innovative option that could prevent speculators from unduly affecting this basic food market, which is so central for the livelihoods of the poorest 2 billion people.

While we do not claim that commentators and reviewers are supportive of this implementation proposal, we gratefully acknowledge comments from and helpful discussions on earlier drafts with Geoff Miller and Chris Delgado, as well as many colleagues at IFPRI, including Miguel Robles, Pablo Druck, and Eleni Gabre-Madhin.

Food Reserves in Developing Countries

TRADE POLICY OPTIONS FOR IMPROVED FOOD SECURITY: EXECUTIVE SUMMARY

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Originally featured on <http://ictsd.org>.

Agricultural prices, along with the prices of primary commodities in general, have been both high and volatile over 2006-11. Whereas the rise in food prices is fairly general, the increase in volatility is confined to grains and some vegetable oils. However, these are exactly the food products which are of concern when discussing food security.

These developments impact particularly acutely on poor and other vulnerable non-farm households who devote a high proportion of their incomes to the purchase of food. At the same time, the terms of trade of many Low Income Countries (L.I.C.s) are little changed or have tended to improve as many of these countries have benefited from comparable rises in their own export crops or mineral resources. This suggests that, for many L.I.C.s, the problem is more one of what government should do about food security rather than how the international community should fund food security.

The food security debate is often posed as a choice between trade and stocks, but this is misleading since the two strategies can be complementary. Countries need to achieve a balanced food security policy. In general terms, food importing countries will need to rely on a mixture of variable import tariffs and export taxes, together with a food security stock. The precise nature of the balance will depend on the country's normal food balance, its grain staple, transport costs and the correlation between its supply and demand shocks and those in the rest of the world. Asian rice-producing and consuming countries, many of which have managed to achieve a good balance between trade and stocks, have typically done this using relatively light government interventions and procurements allowing an efficient private sector to prosper.

By contrast with Asia, the formal grains sectors in many African L.I.C.s are dominated by government, the World Food Programme (W.F.P.) and other agencies. There is a widespread view that food markets function poorly and that crisis management therefore falls entirely on the shoulders of governments and the agencies. The Asian experience indicates that these concerns are excessive, and the private sector can play a substantial role both in crisis avoidance and crisis response. It is important that the governments and the agencies work toward increasing this capacity. One should look for improved communication and consultation between government and the private sector. Because contractual performance can be problematic in crisis situations, there is a potential intermediation role for W.F.P. or other agencies which complements their current role in direct provision of food.

It is useful to distinguish humanitarian stocks from food security stocks on the basis that the former are targeted specifically at vulnerable groups whereas the latter are directed towards overall availability and the general level of prices in local markets. Provided the target group is narrowly defined and the assistance is efficiently managed to minimize leakages, humanitarian stocks will be relatively robust in relation to the crowding out concerns which apply to wider national food security stocks. They will also involve a much more limited financial commitment. The danger is that targeting is imprecise, that the target group is wide and that there is significant leakage into local markets. If this turns out to be the case, well-intentioned programmes, even when genuinely motivated by humanitarian concerns, may undermine market mechanisms. The main impact of poorly designed and executed programmes are likely to be on the distribution of food across households rather than on the overall level of availability. It is therefore essential that any humanitarian stock programme is well designed and efficiently executed.

The international agencies have recently launched a joint P.R.E.P.A.R.E. proposal for regionally based emergency humanitarian stocks. The proposal is a useful starting point for discussion but it is unbalanced in its current form – it focuses entirely on crisis response without considering how crisis incidence may be reduced and it pays scant attention to the potential role of the private sector. The proposal should be welcomed but also remitted for further consideration.

Strategic Grain Reserves

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About the organization

World Grain is a monthly business magazine serving the international grain, flour milling and feed industries.

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The world economic crisis at the end of 2008 led to a profound distrust of financial markets, particularly among the developed countries that were impacted the most. Similarly, the twin price spikes that like bookends preceded the collapse and now accompany the global recovery, have caused political leaders in many developing countries to lose faith in grain and other commodity markets.

After at least two decades of gradual withdrawal as part of an overall move toward free markets and economic liberalization, food price riots in 2008 and the recent unrest in many countries—sparked in part by renewed inflation—have prompted many governments to vigorously intervene in grain markets.

Outright bans, quotas or other restrictions on exports by Russia, Ukraine, Argentina, India, China and others are just one aspect of this trend.

Another is the policy decisions of many countries to increase the size of their strategic grain reserves whether composed of domestic or imported origin. The effects on world markets of these larger reserves have yet to be seen, but could make volatile markets even thinner as governments seek to hold, or as critics would say, hoard more grain.

There are numerous examples from many parts of the world.

Middle East

In the Middle East, a region heavily dependent on grain imports, wealthy governments have decided to invest some of their immense cash surpluses in strategic grain holdings. Industry sources report that Saudi Arabia intends to increase its stock on hand of imported wheat to 1.5 million tonnes, which represents a six-month supply based on an annual milling wheat requirement of 3 million tonnes. A number of large grain storage facilities are expected to be built, particularly at Red Sea ports, as the country has rapidly phased out domestic wheat production due to aquifer depletion after nearly 30 years of costly self-sufficiency.

On April 18, the head of the Iraqi Grain Trading Company stated that his agency would up its wheat purchases from abroad this year to 3.25 million tonnes, equivalent to one year's import supply plus a 1-million-tonne strategic reserve. Last year the country imported 1.9 million tonnes. Iraq will also increase rice imports to 1.5 million tonnes in part for reserve purposes.

Oman recently announced plans to construct a total of 300,000 tonnes of steel silo storage for government wheat reserves at two ports. The country's two domestic milling companies will draw from the reserve in order to rotate the wheat in storage.

In the UAE, there have been recent press reports of a plan to build a very large grain storage complex at the port of Fujairah on the Indian Ocean with financing from Abu Dhabi, the richest of the seven emirates. The location, which already houses a strategic petroleum reserve, would ensure access to imported grain in case the Strait of Hormuz was ever blocked. Saudi Arabia's emphasis on Red Sea storage facilities may reflect the same geopolitical worries.

In line with this theme, industry sources report that Qatar's government is considering building a huge underground grain storage bunker that would protect a wheat reserve from radioactive fallout in case of a nuclear catastrophe in nearby Iran.

In Jordan, where the state is the monopoly importer, the wheat reserve will rise by one third thanks to the addition of a 100,000-tonne-capacity concrete grain elevator at the Red Sea port of Aqaba. However, it could be argued that this increase merely keeps up with population growth.

In Egypt, with the government accounting for 5 out of 7 million tonnes of total wheat imports along with 2.5 million tonnes of domestic purchasing, there is little room to increase its activity except to push holdings up to six months stock, the upper end of the reported target level.

Iran, which has achieved near self-sufficiency in wheat production in the last decade, has gone against the regional tide of greater state involvement in the last couple of years by deregulating most of its wheat sector and allowing private milling companies to buy directly most of the over 15 million tonnes per annum of wheat produced in the country.

Sub-Saharan Africa

Despite its status as the earth's least food secure region, governments in sub-Saharan Africa in recent decades have held only modest grain reserves, if at all. Above all, this has to do with financial constraints, since buying up domestic grain and rotating stocks can be a huge burden on national budgets, not to mention the cost of building proper storage facilities, the market risks of intervention, and problems of transparency and governance associated with such activity. Just as important, all but a few African governments have abandoned the socialist policies of the past, which often included state ownership of grain processing and storage facilities.

However, recently some countries, particularly cash-rich oil exporters, have begun laying the basis for greater intervention in grain markets. Nigeria has adopted a policy that 15%

of the total annual grain harvest should be held in reserve. The National Food Reserve Agency (NFRA) will hold 5% as a core strategic grain reserve, and individual states are to hold another 10% as so called "state buffer stocks."

This policy initiative has already been backed by significant investment. In 2011, NFRA will complete the construction of steel silo storage capacity for over 1 million tonnes of grain, primarily maize, sorghum and millet, at 10 sites in key production areas. Existing NFRA storage capacity was 325,000 tonnes.

In Angola, the state also may divert some of its oil and gas export revenues to create a national grain reserve. The plan is for several hundred thousand tonnes of grain to be held in new government storage facilities under the Ministry of Agriculture. To date, just 45,000 tonnes capacity of steel silo storage has been built in five locations, thanks to development aid from the Spanish government. Despite 30 million hectares of unused arable land, Angola still imports much of its food. Guaranteed government purchases in order to build up a grain reserve could serve as an incentive to more investment in agriculture.

Kenya's National Cereal and Produce Board has decided to double the reserves it stores from 4 million to 8 million sacks of 90 kg. The total of 720,000 tonnes will be almost entirely domestically purchased maize.

Zambia's Food Reserve Agency, since about 2005, has become an active player in buying the maize surplus in the country, holding over 350,000 tonnes of maize, but in the process was subject to criticism for squeezing out private sector trade and contributing to overproduction and a 1-million-tonne surplus that could be neither adequately stored nor exported, resulting in a price collapse in 2010.

Sudan's government, which operates a small reserve for domestic intervention in sorghum and millet, has largely stayed out of the wheat market since total deregulation of the sector in the late 1990s. However, recently it put out feelers for a tender purchase of 300,000 tonnes of wheat.

Ethiopia has operated an emergency grain reserve targeting a level of 400,000 tonnes for about 15 years. Thanks to economic reforms and outside investment, the country has experienced five years of GDP growth averaging 11%. Greater budget revenues should help the country realize a plan to increase the amount of grains held in reserve for both emergency relief and market stabilization.

South Asia

Bangladesh's Food Department is increasing its public stocks of wheat and rice to 1.5 million tonnes from a previous target level of 700,000 tonnes. Up until the early 1990s, the country held 2.2 million tonnes and was praised by international economists for reducing this by two-thirds.

Pakistan and India could be viewed as going counter to the trend of increased food reserves. Thanks to bountiful harvests in recent years, Pakistan is in the process of exporting hundreds of thousands of tonnes of wheat from government stores in order to make room for the current harvest with planned government purchases of 4 million tonnes just in Punjab state.

India's harvest of grain and pulses at 235 million tonnes is at record levels for the second year running. Despite this, the country has banned wheat and rice exports since international prices started rising in 2007. Now many high-placed people are calling for the country to export some of its surplus wheat from a carryover stock that exceeds 17 million tonnes held by the Food Corporation of India, plus another 7 million tonnes in private hands. FCI needs to make room for targeted procurement of 26 million tonnes from the new harvest. There are fears of poorly stored grain rotting. One paradox of large government grain holdings is that due to lack of investment in modern storage facilities, the goal of food security is subverted by storage losses that can exceed 20% in many cases, though this is rarely officially recognized. Most government grain reserve record-keeping shows one bag going out for every bag coming in.

Up to 75% of India's food reserve wheat is still stored outdoors in jute bags piled on raised earthen platforms called plinths and covered with tarpaulins. Most of the rest is stored bagged in go-downs. Only about 650,000 tonnes of government wheat is stored in modern steel silo facilities built by private operator Adani Grain in the last decade. In Pakistan's neighboring Punjab region, the storage practices are the same though a higher share of wheat purchased by the Punjab state government annually may be in go-downs.

Bangladesh is launching an ambitious project to build terminals for imported wheat and rice at a number of ports excluding Chittagong where grain terminals already exist. In other ports for lack of berths and ship unloaders, a couple of hundred laborers with shovels fill sacks in holds of vessels at anchor in the harbor for loading onto 1,500-tonne lighters and transport to mills up river. Handling and transport losses are thought to be significant.

East Asia and Southeast Asia

Though the total is a state secret, China's government wheat holdings are estimated to reach 55 to 60 million tonnes following the harvest with an annual carryover of at least 20 million tonnes. Grain production and consumption represent 20% of the world total, but the impact on international markets is relatively benign due to a sacred policy of 95% self-sufficiency in grain, excepting about 57 million tonnes per year of soybean imports. Most other governments in the region hold large rice reserves. South Korea's hit a record level of 1.5 million tonnes in the last year. In Indonesia, the food reserve agency Bulog has a monopoly on rice imports as does its counterpart in the Philippines.

Conclusion

In countries like Nigeria, increased grain reserves are mostly a domestic market phenomenon. But in the case of wheat, with some traditional exporters—particularly Russia and Ukraine—seeking to protect national stocks on the one hand while on the other hand governments in a number of importing countries build infrastructure to increase their holdings, the implication could easily be less stable and less liquid markets over the medium term.

II.

National Reserves

An Analysis of a Market-Driven Inventory System (MDIS)

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About the organization

National Farmers Union has been working since 1902 to protect and enhance the economic well-being and quality of life for family farmers, ranchers and rural communities through advocating grassroots-driven policy positions adopted by its membership.

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Executive Summary

A new Farm Bill is due and the challenges are many. The budget is lean and likely to get leaner. While some believe that agriculture will remain in a prosperous place in the years ahead, history screams otherwise. Today's crop prices are likely the calm before the sound and fury of the next disastrous price storm.

Over the last dozen years, low-price and high-price extremes revealed shortcomings of the current commodity program. Under the current program, when supply outruns demand, crop prices drop precipitously resulting in very high farm program expenditures. Livestock producers and other grain demanders become the real beneficiaries, while farmers in other countries accuse us of dumping.

At the other extreme, when demand outruns supply, prices spike and crop net returns to often vastly exceed total production costs. The pendulum shift in feed prices causes wrenching dislocations in the livestock industry and raises the consumer prices of food staples, disproportionately affecting the most vulnerable worldwide.

The current type of commodity program is not capable of dampening extreme price and market-receipt variability. Furthermore, this and the other shortcomings would persist—if not become worse—if the current legislation is replaced with any of moment's most-talked about commodity program alternatives, most of which have revenue insurance as their central feature.

The question that this study asks is: Is it possible to design a commodity program that moderates price extremes, reduces economic dislocation and associated economic inefficiencies, cuts government expenditures by well over half, increases the value of crop exports and does not reduce average agricultural net income over the study period? The answer is yes.

The program described and analyzed here is called Market-Driven Inventory System (MDIS). Its central feature is a farmer-owned inventory system that—while it stays out of the way of market forces under normal conditions—moderates prices at the extremes. The intent of MDIS is that reserve activity would only be activated when crop prices become so low or so high that the prices clearly are not providing normally profitable agricultural firms with reasonable investment and production signals. By working with the market, MDIS would ensure that farmers receive their income from the market not from government payments.

This analysis of MDIS has two parts. The first (Phase I) is a rerun of history from 1998 to 2010 with one change: the commodity programs during that period are replaced with MDIS. The second (Phase II) uses the U.S. Department of Agriculture Ten-Year Baseline released in February 2012 as the starting point for the analysis.

Since ten-year-ahead baseline projections lack real world variability, we imposed on the baseline a pattern of shocks that roughly mimic the variability experienced by crop agriculture in the 1998 to 2010 historical period. Obviously, this is only one of literally thousands of possible future paths that agriculture could experience, but it provides a concrete situation that is easy to relate to.

The POLYSYS simulation model is the analytical model used in this analysis. POLYSYS simulates changes in policy instrument levels and/or economic situations as variation away from a baseline situation. In this analysis, historical data become the baseline for Phase I and the USDA baseline was used for Phase II. The crop allocation decisions are made with linear programming models using county-level data as a proxy for farm-level decisions. The crop prices and demands as well as all livestock variables are estimated at the national level. National estimates of revenues, costs and net returns are also estimated.

Historical Analysis (Phase I)

In this portion of the analysis, the actual historical supply, demand and price numbers are compared with what those numbers are estimated to have been had MDIS been in effect. With MDIS in operation, markets work uninterrupted until prices are estimated to fall below a recourse loan rate or, if MDIS inventory is available, prices exceed 160 percent of the loan rate.

In the former case, the model estimates the amount of grain that farmers would need to put under recourse loan with the Farm Service Agency to raise the market price to or above the loan rate. (The loan rate is the “price” that FSA uses to value the grain used as collateral for the loan.) If a market price is estimated to exceed 160 percent of the loan rate, the model checks to see if there is an inventory stock in the MDIS farmer-owned inventory. If MDIS inventory is available, the model computes the quantity needed to lower price to about 160 percent of the loan rate and puts that amount of stock onto the market.

For the historical analysis, the beginning corn loan rate is computed as half way between the variable cost of producing a bushel corn and the corresponding total production cost. In 1998 that number is computed to be \$2.27 per bushel of corn. The 1998 loan rates for other crops are computed to be in the same proportion to corn loan rates as those legislated in the 1996 farm bill, except for grain sorghum for which the loan rate is raised to be equal that of corn and for soybeans for which the loan rate is raised to \$6.32. The loan rates of

all crops are adjusted for 1999 through 2010 using the prices paid by farmers chemical input index. The maximum quantities of grain allowed in the MDIS inventory are specified (3 billion bushels of corn, 800 million bushel of wheat, 400 million bushels of soybeans). Farmers with MDIS recourse loans are paid 40 cents/bushel/year to store the grain and are required to keep the grain in condition.

The rules are that the grain under MIDS must stay in inventory, that is, cannot be redeemed by paying off the loan and marketed until the price goes above the release price of 160 percent of the loan rate and notification is specifically received. With MDIS in effect, all government payment programs, except MDIS inventory storage payments, are eliminated for corn, grain sorghum, oats, barley, wheat, and soybeans. A whole-farm set-aside would be available for use at the secretary’s discretion if MDIS inventory maximums are reached and prices fell below loan rates. Rice and cotton are not included in MDIS and remained eligible for current program payments.

So what would have occurred if MDIS had replaced current programs from 1998 to 2010:

- During 1998 to 2010 actual crop government payments totaled \$152 billion; had MDIS been in effect the estimate is \$56 billion, a savings of nearly two-thirds.
- With MDIS in effect, annual net farm income was, on average, higher in the early part of the period (1998-2005) and lower in the latter part of the period (2006-2010) but for the full 13 years the MDIS net farm income averaged only slightly lower (\$51.1 billion vs. \$52.1 billion)
- Crop prices were significantly higher under MDIS in the early part of the period and for the full 1998 to 2010 period prices were higher by a quarter, half dollar, and dollar per bushel for corn, wheat and soybeans respectively compared to actual prices.
- Had MDIS or a similar inventory-based commodity program been in effect from 1998 to 2010 the value of crop exports would have exceeded the actual value of exports during that period. A higher crop price does cause a reduction in the quantity exported but that decline is smaller than the increase in price, as a result the value of exports increases with price increases and decreases with price declines. (This property does not bode well for the future direction

of the change in value of agricultural exports over the next few years if prices decline.)

Future Analysis (Phase II)

The analysis for this portion of the study follows the approach and most of the basic specifications used for Phase I. The loan rates for this analysis (all in \$/bu) are: \$3.50 for corn, grain sorghum and barley, \$2.49 for oats, \$5.28 for wheat and \$8.97 for soybeans. The loan rates have the same proportion to corn as the loan rates in the 2008 farm legislation. The loan rates are held constant for the full 2012 to 2020 period. The MDIS inventory maximums, storage payment rate and release percentage of loan rates are the same as in historical analysis. The USDA baseline was the beginning point for the analysis but production shocks were used to mimic the variability that crop and livestock agricultures experienced between 1998 and 2010. The result comparisons below are between this shocked baseline assuming continuation of current commodity programs and the MDIS alternative. The MDIS simulation includes those same production shocks.

Results follow the same general pattern observed in the historical analysis:

- Government payments with a continuation of the current program and shocked production total \$65 billion over the ten years from 2012 to 2021; with MDIS the estimate is \$26 billion, a 60 percent reduction
- Net farm incomes averaged over the ten years are almost identical (\$79.2 billion per year under the current program and slightly higher with MDIS at \$79.6 billion)
- Because crop prices average higher with MDIS than under the current program, the value of exports over the ten year period is higher with MDIS by \$15 billion or \$1.5 billion per year on average (more in the first part of the period; less in the latter part of the period).

Conclusions and Policy Implications

- MDIS reduces crop price extremes that otherwise cause severe economic dislocations in the crop and livestock sectors and cause exaggerated market signals that lead to inefficient resource allocations in the short-run and non-optimal investments in the longer-run.

- MDIS provides trade benefits to crop farmers by helping ensure that exportable grain quantities are available in the farmer-owned inventory system when worldwide supplies are short and thus help preserve the U.S. reputation as a dependable supplier in world markets.
- MDIS would discourage or derail “dumping” accusations by competing grain exporters. Also, the value of U.S. grain exports would be larger and agriculture’s trade balance would improve because MDIS actions that raise crop prices when crop supplies are in excess compared to utilization also increase the value of grain exports.
- MDIS would help stabilize grain prices internationally to the benefit of those producers and consumers for which grains are a staple food.
- MDIS could save tens of billions of dollars paid under existing government payment programs and additional tens of billions in “emergency” payments and government subsidies to revenue insurance programs otherwise needed to offset the almost inevitable periodic severe collapses in grain prices. With MDIS grain farmers receive their income from the market and grain demanders are not subsidized or overcharged.

Preparing for Thin Cows

WHY THE G-20 SHOULD KEEP BUFFER STOCKS ON THE AGENDA

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About the organization

Oxfam is an international confederation of 17 organizations networked together in 92 countries, as part of a global movement for change, to build a future free from the injustice of poverty.

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Introduction

Despite their will to demonstrate a strong political engagement, world leaders have struggled to define co-ordinated responses to cope with the effects of the food price crisis. 'Have we already forgotten the "riots" in Haiti or Africa when prices of certain food products suddenly exploded?' asked the French President, Nicolas Sarkozy, in a recent speech, before recognising that 'Between 2008 and 2010, nothing has been done', although the issue had been raised as a priority at meetings of the G8, G20 and the Food and Agriculture Organization of the United Nations (FAO)'s Committee on Food Security (CFS).

The underlying causes of the crisis and instruments to cope with food price volatility have been scrutinised by the international community since 2008. But while historically low levels of grain reserves are unanimously highlighted as a major cause of the food price crisis, food reserves have been largely absent from the international agenda – apart from in relation to emergency responses.

The option of establishing national food reserves has been brushed aside using the same arguments that led to their dismantling in the 1990s. Despite the fact that the recent food price fluctuations reflect 'a collapse in market confidence', as underlined by Justin Lin, Chief Economist at the World Bank, world leaders are still prescribing the same policy measures to deepen market integration. But what can the market do to feed the people who are now living in extreme poverty because of the global economic collapse? Feeding people who have no purchasing power is not covered by market strategies. Will poor countries be able to buy their food in international markets at times of crisis, when their lack of foreign currency does not allow them to compete with other buyers? Will millions of poor consumers be able to buy food at affordable prices, when biofuel producers and better-off consumers are willing to pay more for the same foodstocks?

This briefing paper argues that local and national food reserves can play a vital role in price stabilisation and food security policies. Food reserves have long been out of fashion. But it's high time to look again at the evidence. Examples from Indonesia, Madagascar and Burkina Faso demonstrate that if properly designed, national food reserves can be effective. Some G20 countries and international institutions are starting to look at this. It's high time they all do, without prejudice.

Food reserves can indeed be an instrument – when combined with other measures – to support domestic productivity gains, thus lowering net food importing countries' dependence on international markets and enhancing national food security.

Policy makers need to learn from past experience, but solutions also need to be adapted to the context. Regulating markets does not necessarily mean carrying out highly interventionist policies. The time has come to reassess the potential of food reserves in the context of more integrated but also more volatile agricultural markets, and to experiment with innovative and complementary instruments that

can improve the efficacy of food reserves, while at the same time addressing market failures and providing benefits and incentives to small-scale farmers.

BUILDING THE CASE FOR FOOD RESERVES

Given the reluctance of world leaders to build global grain reserve mechanisms, countries that are dependent on imports should consider establishing national strategic reserves as part of a policy for domestic food security. According to the FAO, 35 countries released public stocks during the 2007–08 food crisis.¹ In India, a massive purchase of rice and wheat in 2008 enabled the government to release sufficient stocks into the market to stabilise prices.²

Limited public stocks and a shortage of foreign exchange have posed a major challenge to food security in many food-deficit developing countries, which have imported much less than they needed, and had to appeal for food aid or external support to bridge the gap.

Setting the rules

Buffer stocks are often associated with monopolies or tight controls on trade, marketing, sale and even production, and have been blamed for discouraging or damaging private activities in developing countries. The international institutions also report that ‘poor management makes buffer stocks ineffective...There is repeated evidence that releases are made too late to influence food prices or to safeguard food security. Abrupt and unpredictable changes in buffer stock operations raise market risk significantly and discourage private investment.’³

If food reserves have been poorly managed in the past or have not contributed to food security or price stability in many instances, this does not mean that the policy tools themselves are unable to stabilize prices. One could rather argue for better implementation of policy and better governance of food reserves to avoid patronage or damaging time lags between government announcements and the actual implementation of policy measures.

Adopting ‘rules-based’ approaches, whereby leaders are committed to acting according to pre-defined rules and triggers, may reduce the level of policy uncertainty and contribute to broader grain market development. Improved management would also imply investing in training and

research to improve the capacity of implementing agencies to adapt the key parameters, including the size of the stocks needed or the domestic price band level (bearing in mind international trends). Finally, ensuring that farmers’ associations, the private sector and civil society organisations have the chance to actively participate in the governance and management of public stocks could significantly increase their transparency and accountability.

G20 leaders are concerned about a possible return to food reserve policies, but it should be borne in mind that taking a highly interventionist approach does not have to be the only way. Oxfam believes that governments should retain the ability to regulate the market to achieve their national food security objectives. But this should be within a clear and transparent framework of credible commitment to support investment in the development of sustainable, resilient and productive smallholder agriculture. Past experiences show the benefits of government intervention when it is restricted to avoiding market failures, making markets work more efficiently, or even creating markets when they do not exist – rather than substituting public activities for private activities. For example, from 1975 to the 1990s, Indonesia’s food reserves have been efficient by just controlling around 10 per cent of the country’s rice market (see Box 1 on following page). The government created institutions to promote savings and encouraged investment in transport infrastructure and market-places, while maintaining a price band (defining the floor and ceiling prices) wide enough to promote private activities when capital markets were particularly weak.

Using innovative instruments as part of a global food reserve strategy

Locally owned and well-managed mechanisms can reduce people’s vulnerability to natural disasters, seasonal market fluctuations, and supply shocks, as well as the need for international food aid. As such mechanisms are based on local producers, they also have potentially strong leverage on local food production and rural incomes. For many years, Oxfam has supported community grain banks through livelihood programmes. Cereal banks and warehouse receipt systems allow decentralised or community-based systems of food management that are designed to protect farmers and consumers against market fluctuations.

Experiences with warehouse receipt systems have proved that they can be strong instruments in promoting farmers’ storage capacity. In several East African countries, such systems have enabled farmers to obtain greater benefit

from marketing activities, while also acting as a valuable source of credit in rural areas, which tend to be neglected by the formal banking sector.

An innovative approach to developing public sector procurement of goods held on warehouse receipts is under way in Zambia, through the WFP Purchase for Progress (P4P) programme.⁴ By purchasing and carrying warehouse receipts, which guarantee availability, quality and quantity of the stock in certified warehouses, government

could indeed lower the burden of stock management, while creating a more predictable environment for private activities. These systems may also help the government to collect more accurate data on the amount of private stockholding, which it could use to inform decisions about how much to import at times of scarcity on the domestic market.⁵

Other studies are also being carried out to analyse how market instruments could be used to better manage national food reserves. In Zambia, a proposal from the United States

Box 1: Indonesia: public rice procurement

During the 1970s and 1980s, Indonesia's rice policy aimed to ensure that poor consumers would have access to adequate and affordable rice, and rice farmers would get reasonable returns for their produce. The price policies included public storage of rice and setting the floor and ceiling prices. The National Logistics Agency, BULOG (Badan Urusan Logistik), managed local agencies at the district level; it bought rice when necessary to lift the price on rural markets to the floor price, and stored it in warehouses, while rice was traded at the wholesale level. These rice stocks, accumulated through domestic procurement and imports (BULOG also had control over international trade), were then used to defend a ceiling price in urban markets.

Stable rather than high prices gave farmers the confidence to make the necessary investments to raise productivity.⁶ Rice profitability came primarily from massive public investments in the rice sector: from the rehabilitation and construction of irrigation facilities (3.7 million hectares between 1969 and 1989),⁷ market-places, roads and ports, and from technical advice and dissemination of technical packages, including highyielding varieties and fertiliser (fertiliser use increased by 500 per cent between 1970 and 1985).⁸

Rice production grew by nearly 150 per cent between 1968 and 1989⁹ and Indonesia, which was routinely the world's largest importer in the mid-1970s – often with one-fifth of the rice supplied internationally – reached self-sufficiency in 1984. At the same time, rice consumption increased dramatically, especially among poor families. Rural poverty fell from 40 per cent in 1976 to 21 per cent in 1987,¹⁰ followed by a huge improvement in food security; the percentage of people suffering from malnutrition fell from 24 per cent (1979 to 1981) to 13 per cent (1995 to 1997).¹¹ According to macro-economic assessments, the rice price stabilisation programme also generated nearly one percentage point of economic growth each year from 1969 to 1974.¹²

A number of caveats should nevertheless be made concerning the governance of Indonesia under Suharto's New Order regime, which was characterised by severe repression against the Communist Party (PKI) and oppression of independent farmers' organisations.

However, despite the critique on political legitimacy, Indonesia's experience shows that government intervention can be highly adaptive to a changing context and can contribute to rapid economic growth, while at the same time promoting the development of the domestic market. From 1975 to 1985, public procurements never exceeded 12 per cent of total production and 15 per cent of consumption (10 per cent in normal years),¹³ while the ceiling price for consumers was maintained around the international price level.

Consequently, the efficiency of the private marketing structure was always crucial for Indonesia. The price band was set in order not to discourage private trade. The margins were primarily determined with reference to the storage and distribution costs incurred by the private sector. The band was progressively widened¹⁴ once the country had reached self-sufficiency. At this time, Indonesia also lowered its stocks to give more flexibility to the system, and was even more effective at stabilising domestic prices.¹⁵

In order to achieve this, BULOG invested significantly in leadership and staff training, allowing regular updates of the rice floor and ceiling prices, as well as the size of buffer stocks needed, or the amount of fertiliser subsidies. Integration into macro-economic policy making and access to financial resources were also vital to the agency's success in stabilising domestic prices.

After the Asian financial crisis of 1997, Indonesia's economic growth was drastically curtailed and it had to call in the International Monetary Fund (IMF) to avoid economic collapse. In return, the IMF subjected the government to severe pressure to scale down BULOG activities and limit public interventions in the rice market.¹⁶

Box 2: Madagascar: inventory credit to improve food security

In Madagascar, in 1993, the Association for Farmers' Progress, FIFATA (Fikambanana Fampivoarana ny Tantsaha or Association pour le Progrès des paysans), set up mutual agricultural savings and credit banks (Caisses d'Épargne et de Crédit Agricole Mutuels, or CECAM) to develop credit services for its members. Today, CECAM provides rural households with a range of innovative financial products, from farming loans to loans to cover family emergencies. Its services include a rice inventory credit product, called the Common Village Granary¹⁷ (CVG), which has the stated aim of 'helping the peasant farmer to master the prices of his products from harvest to commercialisation'.¹⁸

The CVG mechanism allows producers to store part of their harvest for consumption or for sale until the lean season, when local market prices are higher. Since the only collateral required is rice stock, and the minimum quantity is just 75kg,¹⁹ it is easily accessible to small-scale rice producers. With an interest rate of 3 per cent, the level of repayment has always been close to 100 per cent. Most farmers use the CVG combined with other financial products from CECAM, such as the farming loans.²⁰

CECAM's network has expanded rapidly, and by the end of 2008, it had 110,000 members (twice the number it had in 2003), of which 30 per cent were women.²¹ It operates a highly decentralised system, with a large number of small stores. Overall, capacity is estimated at about 55,000 tonnes.²²

The CVG allows poor households to economise on their annual food bill and acts as a consumption smoothing device. At the same time, it allows other farmers to get better access to the rice market and to engage in off-season productive activities.

Agency for International Development (USAID)²³ includes using ZAMACE, the Zambia Agricultural Commodity Exchange, supported by a warehouse receipts system, with both local food and import options. The aim is to enhance the country's capacity to maintain food price stability while fostering long-term increases in farmers' output and supporting development of the market.

A number of recent studies²⁴ have analysed the potential of hedging instruments such as futures and options to reduce some of the uncertainty and risks associated with food imports for developing countries. But almost none of these studies have assessed the potential of these instruments to improve the management and efficacy of food reserves. Call

options, that give the government the right – but not the obligation – to buy the commodity at a set price and at a set time in the future, may yet lower the level of actual stocks needed by a country and add transparency by setting clear rules for government interventions. It may also reduce the vulnerability of national reserves to speculative attacks. By buying call options, the government would send a signal to potential speculators that would discourage them from hoarding in order to take advantage of expected profits, since imports at a previously set price would cover a potential exhaustion of national stocks.

Finally, the 2007–08 food price spike has raised interest in creating a regional food reserve among bodies such as the Association of Southeast Asian Nations (ASEAN), Economic Community of West African States (ECOWAS) in West Africa and the Southern African Development Community (SADC), whether this would mean joint efforts to co-ordinate State-owned reserves or whether it would be a reserve managed by an independent regional body. Having a food reserve at regional level would help governments to smooth out and manage differences between areas with food surpluses and those with shortages within the same region. Regional reserves may also enhance price stabilisation due to the wider scope of the supply and distribution system, enabling economies of scale and therefore lower costs. Last but not least, the monitoring required at supra-national level could help prevent individual governments from monopolising reserves for short-term political gain.²⁵

Public procurement from smallholders: a tool to enhance food security

While national food reserves may have the specific objective of supporting smallholders, past experience shows that setting a floor price for public procurements is a necessary measure, although not often sufficient in itself. Most smallholders do not produce enough to meet their subsistence needs so they are food purchasers, or they may just be able to meet their own food requirements but need specific complementary support to take full advantage of public procurement programmes. This is particularly true for women. Though women produce 60 per cent to 80 per cent of food in most developing countries,²⁶ investments in food production typically target men rather than women because it is assumed that knowledge of these will be shared throughout the family.²⁷ Yet, often, this information is unsuitable for women's needs. Gender is also a fundamental determinant of access to land, credit, training and

control over production. It is therefore essential for public programmes to address these specific constraints in order to realise women's potential.

Several attempts have been made to implement public procurement schemes involving smallholders, such as the Brazilian programme *Fome Zero* (Zero Hunger) or the innovative P4P programme from WFP (see Box 3 below for more on the P4P programme in Burkina Faso). Though both schemes do not aim to lower food price volatility with buffer stocks, they offer useful lessons for governments planning to build food reserves while also supporting small scale farmers' productivity gains.

In Brazil, for example, smallholder agriculture produces 70 per cent of domestic food consumption. Despite using only one-quarter of the country's cultivated land, the sector supplies 38 percent of the agricultural gross national income (GNI), guarantees national food security and employs three out of every four workers in rural areas. Through the

Box 3: Burkina Faso: WFP's Purchase for Progress programme

The World Food Programme set up its Purchase for Progress (P4P) programme in Burkina Faso in 2008.²⁹ Small-scale farmers account for 70 per cent of agricultural production in the country, but productivity levels are low and farmers are largely dependent on uncertain rainfall. The programme proposes forward contracts (with defined quantities and prices) to smallholder farmers' organisations, to assure them a guaranteed market at planting time, therefore encouraging increased production and facilitating members' access to credit, which is crucial for buying fertiliser or seeds. The programme also works with local partner organisations to provide training in quality management, storage and contracting.

In Mali and Burkina, these contracts totalled over 3,700 metric tons of sorghum, millet, beans and maize, to be delivered after the harvest at the end of 2010. However, only 1,200 metric tons have actually been delivered to WFP so far, mainly because some farmers' organisations in Burkina were not able to meet WFP's quality specifications.³⁰

WFP is looking at ways to overcome this problem through training programmes to enhance farmers' organisations' knowledge of quality issues and their capacity for commodity management. In Burkina Faso alone, the P4P programme plans to purchase 16,800 metric tons of food through direct and forward contracting over the next five years.³¹

National Supply Company (CONAB), the Brazilian government purchases food from small-scale farmers without requiring tender procedures, provided that their prices are no higher than those prevailing in regional markets. The food products that are bought are used to supply public programmes in schools and hospitals. In early 2009, the Food Procurement Programme had already invested around \$646m to buy 1.25m tonnes of food products from 86,000 small-scale farmers.²⁸

Recommendation

Developing countries should retain the ability to develop and regulate their domestic food markets and contribute to their food security objectives by mitigating price volatility through buffer stocks by:

- Setting a durable, transparent framework and adopting clear rules and triggers, such as price band and stock-to-use ratios, for public interventions in buffer stocks;
- Promoting public procurement from smallholders at a sufficient price, together with targeted support programmes such as access to credit, inputs and training;
- Developing strong institutional capacities to regularly update key parameters (e.g., the level of stocks needed, trend in market prices, etc.) and to adapt quickly to ever-changing realities;
- Ensuring efficient and accountable governance, with the active participation of farmers' organisations, the private sector and civil society organisations. This needs specific support to smallholders and women's organisations to develop their capacities to engage meaningfully in the management of food reserves at local and national levels;
- Developing synergies and complementarities between local, national and regional reserves to strengthen local food security and enhance regional trade.

G20 members, donors and international institutions should:

- Provide technical and financial support to developing countries for the creation and management of food reserves at local, national and regional levels, in order to limit price surges and as part of a broader strategy to enhance national food security;

■ **Support innovative approaches and instruments to improve the management and efficacy of food reserves in the current context of integrated food and agricultural markets.**

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Strategic Grain Reserves in Ethiopia

INSTITUTIONAL DESIGN AND OPERATIONAL PERFORMANCE

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Introduction

Maintaining grain reserves was, and in many countries still is, an integral part of agricultural price policies—interchangeably termed as food price stabilization, buffer stock policies, or dual pricing policies—in developing countries for several decades. In Ethiopia, such policies date back to the early 1950s when Emperor Haile Selassie instituted the Grain Marketing Board (GMB). However, real control over food markets began when the socialist government came to power in 1974. Consistent with its ideology, the socialist government of Ethiopia instituted a wide range of controls over grain production and marketing. These included determination of annual quotas, restrictions on private grain trade and interregional grain movement, determination of days on which the local markets had to be held, and rationing of grain to urban consumers.¹ Wholesale prices of cereals were administratively set for many provincial markets and changed little between 1976 and the late 1980s (Webb and von Braun 1994, 48). In other words, the government's marketing board was in control of almost all aspects of markets.

Yet, the government decided to establish strategic grain reserves in the early 1980s and continues to maintain it, despite changes in governments and substantial market liberalization since 1991. This background gives rise to three important questions:

1. Why did Ethiopia institute a separate grain reserve agency, even though its marketing board had total control over agricultural markets?
2. How compatible is the strategic grain reserve with overall market-oriented policies?
3. How has the strategic reserve system performed in terms of operational and institutional efficiency?

Answers to these questions not only are important for Ethiopia but also have relevance for regional initiatives, such as the one endorsed by the New Economic Partnership for Africa's Development (NEPAD),² and the ongoing debate triggered by the 2007–2008 food crisis over various proposals for holding grain reserves at regional and global levels.³

The rest of the paper is organized as follows: Section 2 describes how the strategic grain reserve agency, now called the Emergency Food Security Reserve Administration (EFSRA), has evolved over time, and this is followed by a discussion on the organizational structure and management of EFSRA in Section 3. Section 4 presents the results of the analysis on the operational performance with respect to optimal stock, efficiency of stock management, and operational costs. The linkages of EFSRA with emergencies and other food security programs are analyzed in Section 5. The report concludes with a summary and implications of the results.²

Rational and evolution of strategic grain reserves

In Ethiopia, agricultural price control began in the mid-1970s when the socialist government, in line with its ideology, instituted a wide range of controls over grain production and marketing. Among other things, the public controls involved administratively fixing grain prices, setting up annual quotas, restricting private grain trade and interregional grain movement, and supplying grain ration to urban consumers. In other words, the government was in charge of almost all aspects of grain marketing in the country, including maintaining a large grain stock.⁴ However, the drought of 1973–1974 and subsequent famine, which claimed about 200,000 lives, made it clear that the grain stocks accumulated as part of agricultural price policies were not enough to address the country's food emergencies.

Therefore, the government of Ethiopia (GoE) requested the Food and Agriculture Organization of the United Nations (FAO) to undertake a study to analyze possible options for addressing vulnerability to shocks and food insecurities. The idea of setting up a strategic reserve was an outcome of that study. The underlying logic was that since the country was structurally deficit, production shocks were recurrent, and the infrastructure and institutions were weak, the government had to be prepared to protect the poor and vulnerable at times of scarcity. Given the level of infrastructure, institutions, and other constraints, having an emergency stock was considered critical for national food security. This was the rationale for instituting strategic grain reserves in early 1980s and appears to remain valid even today. The frequency of shocks continues to be high, and the country has consistently needed food aid assistance to deal with the emergencies. During 1996–2008, food aid inflow to the country has ranged from roughly a quarter of a million tons in 1996 to about two million tons following drought in 2003 (Table 1). In recent years, EFSRA has played important roles in managing the aftermath of droughts and emergencies. EFSRA was the only immediate source of food supplies in the 1999–2000 and 2002–2003 drought years, and both government and relief agencies heavily relied on the reserves to combat the unusually sharp increase in food prices during 2008–2009. In September of 2008, the EFSRA stock declined from more than 200,000 tons to only about 17,000 tons. Clearly, things would have been worse if the country did not have the emergency reserve.

Year	Total Grain Production (‘000 Metric tons)	Total Food Aid Deliveries (‘000 Metric tons)	Food Aid as % of Production	Production per Capita
1996	10,327.9	244	2.4	0.18
1997	10,436.8	228	2.2	0.18
1998	8,102.7	444	5.5	0.14
1999	8,866.9	473	5.3	0.15
2000	9,233.6	1,231	13.3	0.15
2001	11,039.2	980	8.9	0.17
2002	10,371.4	266	2.6	0.16
2003	11,536.3	1,887	16.4	0.17
2004	10,626.9	732	6.9	0.15
2005	12,573.9	1,004	8.0	0.17
2006	14,411.6	552	3.8	0.19
2007	15,572.5	285	1.8	0.20
2008	16,871.9	626	3.7	0.22

Although it recommended setting up emergency reserves, the first FAO study did not present an implementation plan. Therefore, a second study was conducted in 1979, which recommended building a stock of 60,000 metric tons within one year and 180,000 metric tons within four years. Following this recommendation, the GoE established EFSRA in 1982 as an additional unit of the Relief and Rehabilitation Commission. Subsequently, a joint study conducted by the World Food Programme (WFP) and the Overseas Development Administration (ODA) of the United Kingdom recommended revising stock levels to 204,600 metric tons in 1987. The study came to this conclusion based on the assumption that at least 95 percent of the food-insecure populations need to be protected by providing a ration of 400 grams of cereal per capita per day for a period of four months, which is considered to be the necessary lead time to import and distribute the food to beneficiaries. Food or cash aid involve two lead times: one represents the time between flash appeal to actual pledge by the donors and the other is time between the pledge and actual imports.

Institutionally, EFSRA went through a significant change in October 1992, when the prime minister, in his capacity as the chairman of the council of ministers, issued a legal directive establishing EFSRA as an autonomous agency with significant changes in its operational procedures. The primary mechanism to respond to emergencies was now the provision of inventory loans to well-established relief and rehabilitation agencies working in the country. The

objective was to facilitate relief agencies' operations in case of temporary shortages in their working stocks if there was a guarantee of repayment within an agreed-upon time. However, the new operational manual did not rule out the possibility of free draw down, as was the case earlier, if the scale of emergency was larger and the primary mechanism failed. In other words, the new operational guideline kept the provision for other food security programs, such as safety nets and price stabilization programs, to withdraw from the reserve in case of large-scale emergencies.

Following the droughts of 2002–2003, the reserve level was re-examined and a new stock level was established at 407,000 metric tons in 2004. The increase in stock was largely dictated by the increase in the number of food-insecure people in the country and the old assumption that it would take four months to reach the beneficiaries with a new shipment of food to the country. Before launching this study, IFPRI organized a stakeholders' consultation that was attended by the representatives from EFSRA, Disaster Risk Management and Food Security Section (DRMFSS), nongovernmental organizations (NGOs), and national research organizations. At the meeting, it was unofficially mentioned that a policy discussion was underway to increase strategic grain reserves to 1.5 million metric tons and to establish an enhanced mandate for EFSRA, which includes the agency's larger contribution to price stabilization activities. As the subsequent sections will demonstrate, given current institutional setting and logistics, such a move can lead to a substantial loss of efficiency and an increase in subsidy bills, along with potential disruptive impacts on the grain markets.

Summary and policy implications

Strategic grain reserves have received considerable policy attention following the 2007–2008 global food crisis. This paper has examined the institutional design and operational performance of such a program using the case study of Ethiopia. Overall, the study concludes that EFSRA has performed well in terms of addressing emergencies and managing the stocks efficiently. It has proved effective in addressing emergencies in several occasions since mid-1990s and has effectively managed the grain stocks. The study finds that about 62–70 percent of the EFSRA stocks were less than three months old during 2005–2006 and 2007–2008, with associated holding costs of US\$34.84 per metric ton. This shows a level of stock management efficiency that is better than that in several countries in Africa and Asia for which similar analyses were carried out.

The success of EFSRA has resulted from three key features of the program design. The first important feature is the organizational structure and management of EFSRA, which reflects a high level of government commitment, participation of key stakeholders, and clearly defined rules of procurement and distribution. Second, unlike similar programs in many other countries, EFSRA does not engage in buying and selling of cereals. Instead, it serves as a custodian of the grain, with the key responsibility of lending grain to relevant government and nongovernmental agencies following well-defined official guidelines. Finally, EFSRA has been successful because it has maintained a reasonably smaller stock with very little impact on the market prices. This will change if the stock level is increased significantly. In particular, the results suggest that increasing stock for price stabilization purposes will depress domestic prices, increase the costs, and adversely affect the evolving private sector in the cereal value chain, where millions of people make their living.

The paper argues that there is still room for improvement with respect to EFSRA's linkages with safety net programs and stock optimality. The school feeding program is very small in the country. During 2008–2009, total food distribution under school feeding programs averaged only 6,590 tons. This is miniscule compared with Ethiopia's needs, given that the country has almost 14.5 million children between the ages of 7 and 14 enrolled in school. Even if only poor children are covered under the school feeding programs, the additional demand for food could be as high as 568,000 tons per year. This is a large demand for a justifiable intervention, which not only will keep children in school and increase the nation's future labor productivity but also can contribute to generating local demand and boosting food processing sectors. Given stable prices and the right policy environment, this will also trigger a supply response that can potentially generate benefits for the smallholders in the country.

1. For details, see Franzel, Colburn, and Degu (1989), Lirenso (1994), and Lemma (1996).
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3. The proposals include virtual reserves (von Braun and Torero 2009), rice reserve for Asia (Timmer 2009), as well as suggestions for financial reserves. For a detailed discussion on merits and demerits of various proposals, see Wright (2009).
4. For details, see Webb and von Braun (1994) and Lirenso (1994).

No More Food Crises: The Indispensable Role of Food Reserves

ActionAid International

SUCCESSFUL BUFFER AND EMERGENCY RESERVES

About the organization

ActionAid International's mission is to work with poor and marginalized people to eradicate poverty by overcoming the injustice and inequality that cause it.

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Response to food crisis

The management and release of public stocks, often coupled with subsidised sales of food, was a key response to high prices during the 2007-2008 food crisis. Stock interventions took place in 35 countries during the crisis, including Burkina Faso, Cambodia, Cameroon, China, Ethiopia, India, Kenya, Nigeria, Pakistan and Senegal.¹⁹

Crucially, with speed and timing a key factor in the fast moving crisis, FAO say that those countries with reserve stocks were 'able to respond more quickly and cheaply than those with limited or no reserves.'²⁰

Countries such as Bangladesh, China and India had large enough food reserves and public distribution systems to stabilise prices in domestic markets. For example:

- **Bangladesh** increased the target size of its public food stock to 1.5 million tonnes from the previous year's target of 1 million tonnes in 2008.²¹ This spurred domestic production and helped calm local markets.
- Bangladesh also released up to 300,000 tonnes of public stocks of rice at a lower-than-market rate of US\$0.41/kg in August-October 2008 to check high prices and rising rates of malnutrition. FAO concluded that the food crisis in Bangladesh 'would probably have been worse if there were no public stocks and public distribution system in place.'²²
- A record procurement of rice and wheat at guaranteed prices by the state-funded Food Corporation of **India** (FCI) in 2007-2008 formed part of its policy of price insurance for farmers. The extra stocks allowed the FCI to release an additional 25 million tonnes of grain into the market through India's Public Distribution System – enough to keep a firm lid on rising prices.²³
- National grain reserve systems, state trading companies, and a bumper harvest helped **China** escape the steep increases in grain prices that hit other countries in the Asia-Pacific region in 2007-2008, according to FAO.²⁴

In all these cases, public national food reserves served several goals: they provided a buffer, controlled inflation, supported food production, and provided resources for food distribution or subsidised sales to poor and vulnerable people.

Although some smaller countries such as **Malawi** had re-built their public food reserves sufficiently enough to manage and release public stocks and protect themselves during the food crisis,²⁵ many other low-income food-deficit countries found that the paltry size of their reserves reduced them to merely performing a safety net function during the crisis, where stocks were used for distributions or

subsidised sales to the vulnerable, with little impact on prices.²⁶ Reserves should be large enough to be used for both price-control and emergency food security.

The FAO notes a growing interest in grain reserves at local and national levels, citing **Burkina Faso, Comoros, DR Congo, Madagascar, Malawi, Nicaragua, Pakistan and Zambia** as countries with proposals to strengthen existing grain reserves or to introduce them.²⁷ Some African countries, including **Burkina Faso, Burundi and The Gambia**, have focused on building village-level grain reserves to ensure food security at the community level. **Comoros**, for example, is seeking food aid to build a strategic reserve of six months' supply of rice, milk powder, oils and canned fish; this is the sort of material assistance that the G20 should help to mobilize.

Criteria for Good Food Reserve Systems

The US-based Institute for Agriculture and Trade Policy (IATP) has developed a list of desirable criteria for a coordinated food reserve system designed to help stabilize prices, respond to food emergencies and improve producer opportunities. The criteria include:

- an accountable governance structure with an arms-length principle to ensure that management of the reserves is not politicized
- enough policy flexibility to respond to unusual events and to evolve as circumstances change
- a clear mandate and the requisite authority and means to fulfil that mandate
- a measure of financial independence
- a realistic (and dynamic) assessment of what role world markets can be expected to play.

To these ActionAid would add that reserves should be constituted with produce purchased from local smallholders, where it is possible to do so without distorting local markets.

The best and most accountable national food reserves increasingly are integrated into wider rural development strategies, promote local production, and involve small-holder farmers and CSOs in their governance structures. For example:

Integrated food reserves

Mali's integrated food reserve system is held up as an effective food security reserve, and served as a model for some of the poorest and most vulnerable countries such as Burkina Faso, Chad, Mauritania and Niger. Mali's food reserve system – known as PRMC²⁸ – combines market information, financial tools and physical reserves in six elements:

- an early warning system
- a market information system
- a national security stock of 35,000 tonnes
- an emergency intervention unit
- a joint counterparty fund
- a food security fund²⁹

Although the physical reserve stock is currently not large enough to bring down prices during a severe food price shock, the reserve is well-coordinated among various government departments and donors, and smallholder farmers' groups and CSOs participate in its oversight structures.

National buffer food reserve

Malawi's low food reserves and stock mismanagement contributed to a devastating famine in 2002, and so this landlocked country is now rebuilding its physical reserves through the National Food Reserve Agency. New silos are being built throughout the country to store and maintain 400,000 tonnes of maize – enough for three months' supply. Decisions on when to release stocks are made by a stakeholder committee, which includes representatives from smallholder farmers' groups, the private sector, and CSOs – a process that can be time-consuming, but if made more efficient could serve as a good model.³⁰

Emergency and social protection food reserve

In **Ethiopia** recurring drought, conflict and declining agricultural productivity have increased chronic hunger and the frequency and severity of food emergencies, and as such the country is still heavily reliant on food aid. A model emergency food reserve system has evolved to facilitate timely delivery of food for relief distribution.³¹ The Ethiopian Food Security Reserve is managed by an autonomous administration and has proved its effectiveness on several occasions since the 1990s.³² The maximum stock level is maintained at 407,000 tonnes, and stocks are released to distribution agents in a national donor funded safety net programme, although the Ethiopian government pays the running costs.³³

National reserve and rural development

Brazil uses its national food reserve system to stabilize local prices of staple crops such as maize, and also to foster and support smallholder agriculture and family farms.³⁴ Working through the National Supply Company (CONAB), which monitors food supply, stocks, and distribution, and the programme for the acquisition of food from family farming (PAA), which guarantees a minimum price to food producers, smallholders can sell a set amount of crops to the state at subsidised rates. The PAA is supposed to pay 30% more for agro-ecological products, which provides an incentive to promote sustainable agriculture; however, in practice this premium price is not yet universally applied. The food purchased is then donated and recirculated through local food-security related organisations or lodged in the national or local food reserves. The minimum price policy played an important role in the 2008 crisis by stimulating production.

REGIONAL FOOD RESERVES

There are several ongoing efforts to establish regional food reserves in Asia, Africa and Latin America, and if established effectively they have the potential to:

- enhance disaster and emergency preparedness
- help stabilise prices of key commodities in the region
- boost regional cooperation and integration

Food reserves at the regional level allow for interplay between national and regional reserves. The idea is that a country agrees to earmark and contribute five percent,

for example, of their national food reserve stocks into a 'regional food reserve', which participants can then mutually draw on during a food emergency.

Some regional food reserves also intend to stabilise key commodity prices in the region, such as the ASEAN+3 Emergency Rice Reserve (see below), although they have not been operationalised to this effect yet.

Contributing stocks are managed and maintained in country by either the host country or the coordinating regional body, and participating countries also make in-kind or cash contributions into a regional food security fund or stockpile.

Operating under tight rules and guidelines about how and when the reserve can be triggered, the potential benefits of regionally coordinated food reserves include:

- public monitoring of national reserves by a supranational body can help prevent governments monopolising reserves for political gain
- cost savings through economies of scale
- enhanced price stabilisation due to the wider scope of the supply and distribution systems.³⁵
- provide a forum to achieve collective agreement to avoid trade restrictions during a major food crisis.

Some governments have been 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.³⁶

The following regional food reserves are currently at varying stages of establishment:

Asia: Asean+3 Emergency Rice Reserve (APTERR)
Building on a pilot project from 2004-2007 that never really became operational, the ASEAN+3 Emergency Rice Reserve (APTERR) promotes regional cooperation among the 10 ASEAN member states, plus China, Japan and South Korea, to provide food assistance and strengthen food security in emergencies caused by disasters, as well as for poverty alleviation purposes. The reserve also aims to stabilise rice prices in the region, and although the volume of rice stocks

pledged into APTERR's two rice reserves – earmarked and stockpiled – have been low to date, rice stocks have been released under the following schemes:

- Tier 1 – to address an emergency caused by a calamity
- Tier 2 – to address the lingering impact of a calamity and to strengthen food security
- Tier 3 – for poverty alleviation and/or malnutrition eradication programmes³⁷

Thailand, for example, donated 520 tonnes of rice to victims of typhoon Ondoy in the Philippines in 2009.

There are proposals for the region's major producers such as Thailand and Vietnam to donate about 90,000 tonnes of rice, while Japan, China and South Korea could contribute a combined 700,000 tonnes.³⁸ In total, the reserve will be around 787,000 tonnes when it is fully established in October 2011.³⁹

While APTERR is also geared towards fostering intra- and inter-regional trade, local CSOs are concerned about the lack of CSO representation in its governance structure and worry that countries such as Thailand and Japan will use it to dump surplus rice onto regional markets or to bypass WTO commitments.⁴⁰

SAARC Food Bank (SFB)

Re-launched in 2007 by SAARC⁴¹ members in South Asia – Afghanistan, Bangladesh, Bhutan, India, Maldives, Nepal, Pakistan and Sri Lanka – the reserve is intended to be tapped during emergencies and during serious food shortages.

Stocks in the food bank are held in member countries and decisions on release are taken by an oversight board. The SFB is not fully operational yet – mainly because of some political issues, and at present only around 243,000 tonnes of rice or wheat have been pledged, although there are proposals to increase this to 400,000, or possibly a million tonnes.⁴²

West Africa: RESOGEST

Members of CILSS⁴³ and the Club du Sahel in drought-prone West Africa – including Benin, Burkina Faso, Cape Verde, Chad, the Gambia, Guinea-Bissau, Mali, Mauritania, Niger and Senegal – are committed to establishing a regional food reserve, known as RESOGEST, to be used only for food emergencies.

Still embryonic, the aim is to establish a co-operative regional framework where members pledge five per cent of their national food reserves into a regional emergency food reserve, comprising a regional food stock and a regional food security fund, as well as enhanced information, early warning and surveillance systems. The priority will be holding food produced in West Africa in the reserve, and approaches have been made to the ECOWAS economic regional committee to speed up the coordination of RESOGEST.

Latin America

The Latin American and Caribbean Emergency Preparedness and Response Network (LACERN) has partnered with WFP to set up an effective regional emergency food reserve to respond to natural disaster such as droughts, floods, hurricanes and earthquakes. The Network has a main hub in Panama City, plus three sub-regional hubs, and it provides ready-to-eat highenergy biscuits food aid to countries in the region.

Regional Reserves: Overall Analysis

The G20 should provide strong political endorsement and additional financial support to speed up the establishment of these regional food reserve initiatives. Many of these regional reserves have drifted and failed to establish themselves effectively up until now, and high-level political support is now essential for their success. Other important regional bodies such as the East African Community (EAC), or the Southern African Development Community (SADC), which have long discussed setting up regional food reserves – such as SADC's Regional Food Reserve Facility – should be encouraged by the G20, including with concrete pledges of material assistance where required.

China's Wise Wheat Reserves

Jim Harkness, Institute of Agriculture and Trade Policy

About the author

Jim Harkness has been the president of IATP since 2006. Previously he served as Executive Director of the World Wildlife Fund in China from 1999–2005. He has written and spoken frequently on China and sustainable development, and has served as an adviser for the World Bank and the United Nations Food and Agriculture Organization.

About the organization

IATP works locally and globally at the intersection of policy and practice to ensure fair and sustainable food, farm and trade systems.

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It's fashionable to worry about China. One common fear is that China's increasing demand for food will wreak havoc on international markets, causing mass starvation in food-importing countries. However, China uses safeguards to stave off food shortages. We could learn from its approach.

The Food and Agriculture Organization (FAO) recently declared a "food emergency" in China due to a once-in-a-century drought affecting one-third of its wheat fields. China is the world's largest wheat producer, with an annual harvest of around 115 million tons. That's equivalent to the total amount of wheat in all international trade. So while its current imports are negligible, news of the drought brought dire warnings that if China turns to global markets to make up for a poor harvest, it could outbid developing countries and sharply drive up prices.

But China isn't a big player on global grain markets. Even in years when harvests fall short, it maintains a large emergency grain reserve. In China, food security is national security, making the reserve's size a state secret. The FAO estimates it at about 55 million tons. Other estimates run much higher than that. So the equivalent of between one-half and two-thirds of the country's annual harvest is available for precisely this kind of emergency.

Reserves have helped to largely insulate China's domestic grain markets from the ups and downs of world markets, benefiting both China and everyone else. So while we can't be certain that China won't disrupt the global grain supply through imports, we know that unlike countries without reserves, they can meet domestic needs.

The idea of storing surplus grain to guard against famine dates back at least to the Old Testament, when Joseph gave just such advice to the Pharaoh. Its history in China is almost as long. Ancient records describe how the emperor's "Ever-Normal Granary" not only prevented famine, but also stabilized prices for the benefit of both farmers and consumers. New Deal farm programs inspired by China's imperial reserve system pulled us out of the Dust Bowl and fostered the most stable and prosperous period in U.S. agricultural history.

While China maintains vast reserves of grain and other foods like pork and edible oils, the United States and most other countries have abandoned this wise approach. For 30 years, neoliberal market fundamentalism has treated food like any other consumer product—rather than as a necessity. Big grain traders never liked reserves, which they claimed were inefficient and market-distorting. U.S. Farm Bills have abandoned reserves and other tools to manage supply.

This free-market system left food-importing countries without a lifeline when global prices spiked in 2007. The ranks of the world's hungry swelled by another 100 million over the following year.

Another food crisis is emerging. In February, the U.S. Department of Agriculture reported the lowest stocks for corn in the last 15 years. This puts us one severe weather event away from a major corn shortage. Major agricultural exporting countries like Russia, Argentina, and Australia have already experienced severe weather that has limited crop production and further tightened global grain supplies.

Fortunately, grain reserves are gaining traction again. The issue will be discussed at the upcoming G-20 meeting. And countries in West Africa, Asia, and the BRIC (Brazil, Russia, India, and China) are all exploring grain reserves.

Certainly, China's food system is far from perfect. Chinese demand sometimes does impact global prices. While it strictly adheres to self-sufficiency for wheat, China relies on foreign supplies for its burgeoning soybean consumption. It recently became the world's biggest soy importer. But overall, for a country that must feed 20 percent of the world's people on 9 percent of its arable land, China has clearly figured something out that others haven't.

It has become clear over the last three years that our global food system is vulnerable to disruptions. In this new era, China's approach to "food security as national security" may offer some important lessons for the rest of the world.

III.

Regional and International Reserves

Protecting the Food Insecure in Volatile International Markets

FOOD RESERVES AND OTHER POLICY OPTIONS

Ian McCreary, Canadian Foodgrains Bank

About the author

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About the organization

Canadian Foodgrains Bank is working to end global hunger.

This excerpt is from an original paper published by the Canadian Foodgrains Bank in March 2011. IATP thanks the Canadian Foodgrains Banks for their permission to include this piece.

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Executive Summary

Food markets have always been recognized as distinct. Food is required daily by everyone while production patterns are seasonal. For wheat which is overwhelmingly produced in the Northern Hemisphere, seasonal production patterns are annual events. Corn and soybeans have a larger Southern Hemisphere component but production responses remain concentrated.

In economic terms, the distinct nature of agriculture markets is expressed as inelastic supply and demand. This means that, in the short term, the quantity produced and the quantity demanded does not change significantly with the price. It also means that, if there is a shift in available supply, prices can vary dramatically. The short term measures of supply and demand are not straight lines. Rather, both supply and demand are curves which become steeper as prices increase. In the long term, quantity supplied does respond to increases in prices. Supply responds much more to price increases than price declines.

Markets operate with imperfect information and 'stock to use' ratios are one of the most important pieces of information determining prices. Since the Second World War, markets have been heavily influenced by public sector stocks. The international wheat agreements, US agriculture policy, European agriculture policy, and stocks held in a number of importing countries all provided a buffer to give everyone security that food would be available in international markets. With the exception of the large price spike in 1972-4, prices were relatively stable throughout this period. In the last two decades, there were profound structural shifts in trade patterns and a gradual reduction of stocks. The collapse of the Soviet Union; import growth in Asia, and production growth in South America each represented significant shifts to global agriculture. These dramatic shifts in grain trade were all absorbed without significant increases in price volatility. However, the rapid growth of biofuel production in the last decade ultimately drove stock levels to record lows which in turn drove the recent price volatility.

Markets have become more integrated. Trade in agriculture has been brought under the WTO and some of the rules are more clearly defined. Trade is important to food security as production shortfalls in one area are offset by surplus production in other areas. However, trade and market integration also creates risks for food security. Integrated markets mean that poor households must bid against western demand for biofuels when supplies are tight. As production and consumption increases, poor and vulnerable people become the buffer for an ever larger pool of cereal production and consumption. The dynamic is unacceptable. World trade talks have stalled; and confidence in international markets is in decline. To renew confidence in international markets, importers need assurances that supplies will be available. Stock policy is thus an important component of market integration.

Stock-related policy responses need to be different for each of the commodities.

1. **MAIZE/CORN** - a biofuel set aside program is suggested. Either through variable mandates or by bidding production off the market, assurances must be provided to the global economy that biofuel production will be adjusted when food supplies become critically tight.
2. **WHEAT** - a coordinated fixed quantity multilateral reserve representing 1-2% of global use is recommended.
3. **RICE** - small regional reserves are recommended. Rice is thinly traded and there would not be confidence that a reserve centrally held by exporters would be available to all in the event of tight supplies.

Stock policy and biofuel set asides need to be driven by supply information and not be based on price bands. The market prices need to find new levels and price band approaches are not sustainable

Better information is required on global production and stocks. This information will itself reduce market volatility. The proposals in this paper which recommend biofuel set asides, international buffer stocks for wheat, and regional rice reserves will each require improvements in market and stock information to succeed.

Reserve policy, improved information and transparency, and fair trade rules are only a subset of the planks required to improve global food security. A new Food Assistance Convention will still be required to guarantee a minimum amount of food for emergencies and other settings where food assistance is appropriate. Donors should continue to accept the price risk of commitments under a new Food Assistance Convention and support stockholding to cover their risks. Public sector investment in productivity for smallholder agriculture is also required to increase the resilience of agriculture globally. However, none of these food security programs can be expected to be successful if cereal prices continue the erratic volatility of the past four years.

Improving Food Security in a Volatile World Market - Proposals for Discussion

International markets for agricultural commodities are at a historic cross roads. Integration of global markets has meant that nations are able to focus their resources on those activities and outputs that create the most value. However, the last three years has shattered that confidence for food commodities. After three decades of subsidizing the production of agricultural commodities, a shift has been made in the Western world to, in effect, subsidize the consumption of grains and oilseeds through biofuel. Prices and supplies are unacceptably volatile. Poor consumers face the prospect of having price ration access to food when supplies are tight. This now means that vulnerable households and poor countries must bid against a subsidized ethanol and biodiesel demand to get this food.

In the absence of a solid international plan to address the volatility and uncertainty, nations can be expected to step away from the global market and develop individual solutions. Contracting large blocks of land in Africa, developing inefficient reserves in each nation, increasing trade barriers are all starting to emerge. The world has the opportunity to address the issue in a multilateral context and save a tremendous amount of resources.

A proposal for establishing an international reserve has a number of challenges. First, as outlined earlier in the paper, wheat, rice, corn, and oilseeds markets each have very different structures and each affects the other markets. Wheat and corn require different stocks to use ratios for their markets to function so ending stocks cannot be simply added for one common total. A single policy instrument is probably not appropriate for the major food commodity markets.

Second, international governance and cooperation appears to be at a low ebb with countries increasingly focussed on domestic concerns and protectionism on the rise in many countries. Policy instruments need to recognize the limited commitment to multilateralism and limit the degree to which national policies will be affected by multilateral agreements.

Outlined below are five elements which have the potential to improve food security and to add a certain amount of stability to an otherwise unacceptably volatile global marketplace. The five components are distinct but each is set to address primarily the issues in one of the commodity groups.

Three of the components require bidding grain or grain capacity into a reserve for use in times of shortfalls. It is proposed that this be done multilaterally either through an existing organization or through a new one specifically tasked with oversight on the global marketplace similar to the mandate of the IGC following the collapse of the IWA. Funding would need to be multilateral and all market activity would need to be transparent and predictable.¹ Funding requirements are modest. A formula similar to that used for the UN or World Bank could be considered. Note that using a central organization to build a volume limited policy reserve or reserve capacity on a contractual basis removes the many governance issues of the traditional price band international commodity reserves of the past.

1. Biofuel – A New Potential for Reserve Capacity

There are two lenses with which to look at the profound growth of biofuel demand over the last decade. First, biofuel demand was central to the price spike in 2007-8 and it is central to the volatility in 2010-11. There is widespread recognition² that biofuel demand is a central cause of the current volatility. In this regard, biofuel is part of the problem. However, biofuel demand has created an incentive for agriculture production. The new demand has renewed the call for appropriate investment in agriculture in vulnerable areas. This new demand ended three decades in which many producers faced prices which fell short of the full value of production, thereby blunting agricultural development.

The current rebuilding of agriculture capacity creates the opportunity for a public policy which uses ethanol as reserve capacity which could be scaled back in the event that supplies are excessively tight and food security is threatened. By having a transparent policy which pulls biofuel capacity out of production in times of excessively tight stocks to use ratios, it will be possible to assure food and feed users that supplies will be available.

There are a number of possible approaches to scale back biofuel in the event of supply shortages threatening food security. The simplest policy approach is to reduce the biofuel mandates when stocks are projected to fall below threshold levels. Currently many western nations have implemented minimum biofuel requirements in diesel and gasoline. These requirements sustain a policy demand for biofuel regardless of price. By rolling these mandates back in times of tight cereal stocks, ethanol and biodiesel producers would be expected to reduce production and

free up supplies for food and feed. This approach has the advantage of not requiring any public funds to be effective. The challenge is that mandates are national in scope and the benefits of variable mandates would be expected to be international in scope. The primary benefactors would be corn and oilseed importers while much of the biofuel production is in exporting nations. International agreements or treaty arrangements would be required and it is likely that other provisions need to be part of the solution to make the package equally attractive to all potential participants in a negotiation.

A second limitation of a variable mandate proposal is that there are times when biofuel is competitive with gasoline and diesel without the mandate. With this type of oil/cereal price relationship, mandate reductions would have no impact on biofuel production.

One contractual approach to scaling back biofuel production when food security is threatened is proposed by Wright.³ He suggests that governments “could purchase call options on grain from biofuel producers, with appropriate performance guarantees. “The contract is similar to the stand down contracts for electricity in which an industrial user agrees to reduce or discontinue use of a specific volume or during a specific time period. The performance guarantee is considered to include agreement that the option includes a commitment to reduce output rather than simply purchasing other cereals to produce the ethanol. The options could be priced on an auction. This approach would have the effect of a government or international organization paying a regular fee to biofuel producers for a commitment to reduce output when specified conditions are met. Bids would be expected to be based on expected foregone profits for that volume of reduced output. Fees would be paid regularly regardless of the number of times that the option needs to be exercised. One advantage of using a contract option is that the volumes of reductions would be known to the market and expectations would be formed accordingly.

An alternative to the option contract proposed by Wright would be to have specific defined conditions in which governments (or a multilateral organization) would bid to pull a specific volume out of biofuel production. This type of auction would be triggered when transparent preannounced conditions were met which signalled excessively tight supply demand situations. This would only require payments in times that supplies were actually required and the conditions could be similar to the ones proposed for the option contract. It is anticipated that the costs of an

as-needed auction would be less as there is no uncertainty in the forgone opportunities. Given a competitive bidding process total costs would be contained.

It is important to note that regardless of the nature of the contracting approach, two elements are essential for success. First, the process must be predictable and transparent. Second, if biofuel production is at the mandated minimums, a concurrent reduction in the mandate is required. If the mandate is not reduced, biofuel prices will escalate and it is likely that other producers will add a shift or find other ways to backfill the production which has been pulled off the market.

It is expected that by using biofuel as a reserve capacity ('biofuel set aside'), the volatility which originates from corn and oilseeds can be scaled back to levels which will not threaten food security or overflow to other food markets. Given the scale of the biofuel industry, it is likely that any attempt to reduce the volatility of international markets without tackling the biofuel question will either fail to meet expectations or will prove to be extremely expensive.

2. A Fixed Quantity Wheat Reserve – Smoothing Supply Volatility

Wheat stocks to use ratios were central to the 2007-8 price spike. The wheat market functions in price ranges which trigger modest expansion and contraction in supply when total stocks to use ratios exceed 20%, with exporter stocks approximately one third of these levels. When stocks fall below these levels, the international wheat market becomes a source of insecurity rather than a food security source.

Historically, wheat supplies have been buffered by large public sector stock policies. Both the international approaches and the national policies of stock holding by exporters ended by the 1980s. However, with climate change, there appears to be a dramatic increase in supply side volatility in both Western Canada and Australia. The former Soviet Union, once an importer which held national reserves, is now an exporter with even more dramatic supply side fluctuations.

To smooth the supply, it is necessary to create an international wheat reserve. One approach to creating a reserve is to bid a fixed quantity, 1 to 2% of global use (6-12 million tonnes), off the market in time periods when stocks are projected to exceed 27% of global use and make these stocks available in times when stocks fall below 20% of global use. The size of the stock is based on the observation that, in the

absence of such stocks over the past decades, stock to use ratios have not fallen below 18.9%. Bids could be received from exporters to purchase and store the grain and a transparent auction developed to release the grain based on a clear set of criteria concerning global stocks.

Cost estimates to carry such a fixed quantity reserve (FQR) are difficult to calculate precisely. Based on the OECD calculation and trade estimates received, an upper bound for the costs would be \$35-\$36/mt/yr. There is considerable infrastructure in North America and Europe from times when stock levels were much higher so bids would be expected to be well below these levels. Using the upper range of cost estimates, a reserve of 6 Million tonnes would carry an annual cost of \$210 million.

As with bidding biofuel off the market when supplies are tight, importers will gain more than exporters. It is thus necessary that a multilateral approach be developed to fund an FQR. A multilateral approach with a single defined set of operating criteria has a number of advantages. First, is that one international auction will be the most efficient and ensure that grains are held where it is the most cost effective to do so. Second, any reserve approach requires clear and defined criteria to purchase and release grain. By having one international auction, many of the international governance and coordination issues are removed. Finally, one reserve which is developed and released on clear commercial criteria removes many of the concerns of distorting commercial trade.

To make a global wheat reserve which is centrally managed effective, better information and forecasting would be required for stock levels in a number of countries whose total production and usage of wheat is very large. The proposed wheat reserve would require the biofuel set aside program to be in place for the modest reserve size to be effective. It is important to note that a biofuel set aside for wheat is not as likely to be effective as wheat volumes used in ethanol are small and the quality of wheat used in ethanol would likely flow into the feed market as a corn substitute if it is not consumed for biofuels.

3. Regional Rice Reserves

For rice, small, decentralized rice reserves are likely to be the most effective. Trade in rice represents a small portion of total consumption. Exporters are also large domestic users and rice exporters are not high income nations. The exporters themselves need to be in a position to assure domestic consumers that food is available. As a result, rice

trade is more vulnerable to export embargoes and other limits to trade. A reserve model to provide assurances of adequate food supply for rice consumers is therefore more complicated than for wheat. A single, exporter based reserve would either be subject to the same trade restrictions or be perceived to be vulnerable to these restrictions. Thus, a single reserve approach will not be expected to gain the confidence of importers. Wherever possible, regional reserves would reduce costs relative to the alternative of individual country reserves. For rice markets to attain a reasonable period of stability, it will be necessary for wheat and corn markets to attain some level of stability.

4. Market Information – Improving Transparency

Any discussion or market report on current markets quickly moves to one of two topics – future production or anticipated Chinese purchases. There is very limited opportunity to improve the information on the size of next year's production. However, there is considerable room for increased information on the situation in China and a number of other large production or trading regions. As outlined above, information on stock levels in China are only estimates based on observed behaviour. Yet, Chinese stocks often represent overwhelming influence on the global stock position. Similarly, the former Soviet Union has the potential to be a key driver in the balance between supply and demand yet the level of uncertainty on production, consumption and stocks in these regions continues to be very high. Market participants struggle to understand the magnitude of production shortfalls in the former Soviet Union in a timely manner.

Any move to increase the level of stability in international markets is likely to be a net benefit to all importers and China has the potential to benefit in a major way. In a current market of historic volatility, China has a vested interest in maintaining a level of confidentiality on stock levels. The proposals on building reserves and reserve capacity through biofuel offsets require increased transparency by all major global participants. A negotiated solution which ties increased transparency to improved stability will be required. Given the interest by Brazil, Russia, India, and China in improved stability at their 2010 BRIC meetings, progress appears possible in this area.

Given the very concentrated trade in soybeans, the transparency work will be particularly important to improve the function of the oilseed market. However, to make any other policy instruments effective for the other crops, increased transparency is required for other crops as well.

5. Public Sector Reinvesting in Primary Agriculture

The two decades from the introduction of the 1985 farm bill in the USA until the lead up to the price spike in 2007, saw a significant decline in the investment in smallholder primary agriculture. Prices were forced below the cost of production and the economic incentives and structural adjustment programs forced an artificial decline in agriculture investment. Aid programs for agriculture were cut. Agricultural development focussed on resilient and sustainable systems represents an excellent opportunity to improve the entitlement set for vulnerable households, increase agricultural productivity and, to some extent, reduce the volatility of agricultural production. It is important that the investment made is suitable for improving the entitlement set of people who are earning their livelihood from agriculture. There is huge risk with some recent large scale investments that the farmland resource will be redirected to centralized ownership and managed without regard for the impact on the entitlements of vulnerable peoples. If this happens, vulnerability could in fact be increased as production increases.

1. For biofuel set-asides, bilateral discussions among the key players may be more likely to succeed than multilateral approaches. There are very few major biofuel producers and the US is central to the debate. The US will need to see specific commitments from other key players to enter discussions on biofuels. This may include transparency with the BRIC countries and comparable commitments on biofuels from other major producers. Multilateral funding may be possible.

2. Heady and Fan 2010, Wright, 2011

3. Wright, B., "Biofuels and Food Security: A need to Consider Safety Valves?", IPC Policy Focus, February 2011.

Strategic Food Grain Reserves

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About the organization

Wageningen UR Centre for Development Innovation (CDI) works on processes of innovation and change in the areas of secure and healthy food, adaptive agriculture, sustainable markets and ecosystem governance.

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<http://www.cdi.wur.nl/UK/>.*

Summary of conclusions and recommendations

1. Food grain reserves may be kept at different levels: local, national, regional and global and stock keeping can serve a variety of policy aims. This paper concerns public held food grain reserves at national, regional and/or global level.
2. Holding and operating 'strategic' reserves by the public sector (i.e governments, parastatals or international agencies) generally has two distinct but linked purposes: emergency response and price stabilisation in food markets.
3. Since the essential function of strategic food grain reserves is always buffering against short-term developments and crises in food markets and/or emergencies, they are only of limited value in addressing the long-term developments in national or global food security such as the effects of climate change and changes in consumption patterns in upcoming economies.
4. However, strategic food grain reserves may contribute to longer-term food security provided they are integrated in clear policies aimed at food security and/or development of agricultural production and private sector food markets.
5. Whether used for emergency response or for price stabilisation or a combination of both, effective operation of strategic reserves requires (access to) comprehensive early warning and market information systems (e.g FAO/WFP, FEWS NET and local systems), professional, transparent and accountable management and predictable intervention policies to avoid negative effects. The management of reserves should have an 'Central Bank' type autonomy with respect to government policy and political influences.
6. While emergency and food-aid reserves may be physically combined with reserves aimed at market stabilisation, a clear distinction between both purposes should be maintained and translated in management and administrative rules.

Reserves for emergency response

7. There appears to be wide support for further improvement of emergency response and safety-net programmes including the establishment of emergency food grain reserves and financial reserves coordinated by the WFP.
8. Emergency/food aid reserves should fit in integrated food security programmes and be linked to domestic and/or regional markets to stimulate the long-term development of such private sector operated markets. (e.g the WFP operated P4P programme).

9. Emergency response reserves at national level should by preference be combined with financial reserves since this will reduce the cost of maintaining physical stocks and allow flexibility of purchase and logistics.
10. An internationally WFP coordinated system of Emergency Response Reserves along the lines proposed by IFPRI, with stocks to the level of 300,000 – 500,000 mt based on existing national and/or regional reserve programmes, would contribute to global emergency response efficiency and food security. However, negotiating agreement on international coordination and funding may not be easy.
11. The proposed expanded Forward Purchase Facility operated by WFP could be an important instrument to complement the financial tools available for (re) stocking regional emergency response reserves.
12. Efforts to develop regional coordination of national food reserve programmes aimed primarily and emergency response and targeted humanitarian programmes (e.g. RESOGEST and SADC Regional Food Reserve Facility) deserve support.
13. The role of reserves in price stabilisation in less developed domestic markets is probably limited. Intervening in markets with the use of reserves is often costly and demanding in terms of management (see also 5. above).
14. The existing reserves held at national level in developing countries should be limited in size and avoid a dominant position in domestic markets. Preferably, interventions should be targeted at vulnerable groups, possibly in the form of a combination of physical stocks and reserved funds.
15. National/regional reserves should only intervene in markets according to clear and transparent rules and in terms of price bands to enhance market functioning.
16. Improvement of market information systems (including registration/monitoring of private sector held stocks) and transparent market regulation.
17. Since domestic food grain prices, although linked to world market prices, are primarily based on local and regional market fundamentals of supply and demand, it appears that improved coordination and collaboration at regional level between existing national reserve programmes, combined with improved systems for market information and monitoring, is likely to be more effective and feasible than the IFPRI proposal for an international coordinated global food reserve controlled by a high-level technical commission of 'The Club'. (see also 13. above).
18. There is wide support for the view that 'insufficient market transparency' was among the root causes of price volatility. Improving market transparency through improvement of market information and introduction of registration and monitoring of public and private sector stock positions and transactions by an independent organisation, may be an effective option. The use of physical reserves to intervene in world markets, as proposed by IFPRI, is likely to be costly and probably less effective.
19. The influence of financialisation of commodity futures markets needs to be further clarified. This is why the establishment of a 'virtual reserve' to intervene in the futures markets as proposed by IFPRI is at least premature and possibly unwanted. Improved market regulation to make commodity

Reserves for price stabilisation

13. Following the statement proposed for the October 2010 meeting of the FAO Committee on Food Security, it may be concluded that: 'market regulation policies at national and international levels based on global or regional buffer stocks cannot prevent price spikes (...) The experience with public buffer stocks suggests that, often, such interventions have been disruptive rather than stabilizing. Given the current state of knowledge about markets and previous experiences with collective action problems, it is not likely that such initiatives present practical solutions on a multilateral basis.'
14. In developed countries or regions with well-developed production and consumption value chains like the EU and North America, keeping reserve stocks for food security and/or price interventions should not be necessary. Price interventions and farmer subsidies in the EU and USA have a negative influence on development of food production and investments in agriculture in developing countries. The Dutch Government has a long term commitment to reduce such subsidies and to avoid interventions in the world food markets based on excess stocks.

futures markets more transparent and curb the risks of unwanted speculative trading in food commodity derivatives as currently considered by the US Commodity Futures Trading Commission CFTC ('the Dodd-Frank Act') and the European Union (the Markets in Financial Instruments Directive MiFID) is likely to be more effective in reducing risks of price hikes.

22. Current WTO rules permit developing countries to implement governmental stockholding programmes for food security purposes. In the Agenda on Agriculture, there are two relevant provisions, both placed under Green Box and relate to public stockholding for food security purposes (paragraph 3) and domestic food aid (paragraph 4), respectively. However, the WTO rules of government support to agricultural development were designed for an era of cheap food. In that era, the aim was to promote exports and discipline situations leading to depressed prices in world markets adversely affecting exports. Also, production subsidies and import barriers that lead to lower prices have been the target for reform, while policies that have to opposite effect, such as export taxes and prohibitions as well as consumption subsidies, have been largely tolerated. WTO rules and disciplines are therefore much less effective in situations of high world market price years than they are when they are low (Konandreas, 2010).

Therefore, a legitimate question is whether the current rules, require adaptation to address the opposite problem of dear food and food crises.

IV. Letters

An Open Letter To Congress on the Need for Strategic Grain Reserves

About the organization

Grassroots International works to create a just and sustainable world by building alliances with progressive movements.

This letter was originally published by the National Family Farm Coalition on April 28, 2008. IATP thanks Grassroots International for their permission to include this piece.

Originally featured on <http://www.grassrootsonline.org>.

April 28th, 2008

Dear Member of Congress:

All around the globe, food riots have shaken countries from Haiti to Egypt to India to Uzbekistan while rising rice prices cause grief in many Asian countries. A global food crisis threatens to impoverish millions around the world. Here at home, livestock and dairy producers, bakers and food processors have expressed their fears over skyrocketing commodity prices while higher food prices are eating into many family budgets. News reports nervously highlight that U.S. and world grain stocks are at all-time lows since World War II.

For more than a decade, and particularly during Farm Bill negotiations of the past year, we have been sounding alarms over the precarious state of our food security. The undersigned farm, consumer, environmental, religious and development groups believe it is urgent that we establish a Strategic Grain Reserve, similar to the Strategic Petroleum Reserve, and re-instate the Farmer-Owned Reserve. Under the 1996 Freedom to Farm Act, the United States eliminated all its government stocks, save for a very small amount in the Emerson Humanitarian Trust Reserve intended for foreign aid. We are just one drought away from possibly seeing \$10/bushel corn or \$20/bushel wheat with absolutely no plan in place to deal with such a calamity. The president and U.S. Congress have irresponsibly ignored this issue throughout the entire Farm Bill debate, even as other countries such as China and India build up their strategic stocks. Last October, the European Union stated they would examine establishing reserves to further buffer against price shocks. The United States cannot afford such ill-prepared planning that is putting our food system and larger economy at grave risk.

The idea of holding grain reserves to stem hunger has been a part of many ancient civilizations. In the Old Testament, Pharaoh put Joseph in charge of Egypt's grain reserves that would set aside one-fifth of production to account for seven fat years followed by seven lean years. A "constantly normal granary" operated in China for over 1,400 years. China's grain reserve is presently between 150 million and 200 million tons. During the New Deal, the United States established grain reserves as a way to protect farmers from depressed prices and to ensure soldiers and consumers had enough to eat. The idea for the government to hold "buffer stocks" as a way to stabilize commodity markets was widely popularized by Benjamin Graham, a Wall Street legend who mentored Warren Buffett. In 1977, Congress enacted the Farmer-Owned Reserve in the Farm Bill as a means of "maintaining adequate food reserves." These policy mechanisms were all dismantled by the 1996 Freedom to Farm Act. The global move towards free trade and trade liberalization means countries around the world have also forfeited much of their food stocks. The current price volatility roiling global food prices should come as no surprise.

Reinstating food reserves would facilitate more orderly marketing, protect consumers from price surges, and could meet energy and humanitarian needs. The possibility of short supplies seriously threatens our reputation as a reliable exporter and is one of the fundamental reasons behind current market speculation as suppliers hoard their stock and commodity traders buy and sell wildly. Currently, private corporations control U.S. grain reserves as a result of Congress's decision to privatize our excess commodity supply.

Our government should be responsible for providing a stable supply of food for their citizens in the face of unpredictable disruptions in grain production. Strategic reserves are also a much more responsible approach to addressing the rise in commodity prices that have caused much anguish from livestock and dairy producers, bakers and food processors. Some groups have advocated for allowing Conservation Reserve Program acres to be brought into production as a solution. We oppose this shortsighted move that would devastate ecologically sensitive land so revered by conservationists and hunters. We cannot grow our way out of this crisis.

Those clamoring for the days of cheap commodities need to remember that commodity prices collapsed after the 1996 Farm Bill, with corn falling to \$1.50 / bushel and wheat under \$3 / bushel. These prices were lower than what farmers received in the 1970s! As a result, thousands of farmers went out of business and billions were spent in emergency federal payments. Agribusinesses profiting from buying cheap corn and wheat have never showed much concern for the perilous plight of farmers. Now that higher prices are sparking cries for more production, the United States needs to have a long-term vision for preserving our food security and food sovereignty – much more than simply answering agribusiness's pleas for cheap commodities. A prudent reserves policy that stabilizes commodity prices would reduce controversial farm subsidy payments by ensuring prices do not collapse. Ten-dollar corn is a threat to our system, but \$2 corn should be every bit as unacceptable.

A Strategic Grain Reserve is just as vital as a Strategic Petroleum reserve. It is not too late for Congress to establish policy that will benefit both consumers and farmers instead of leaving our fates to the whims and dictates of unstable, globalized markets. As a matter of national security, our government should recognize and act on its responsibility to provide a stable market for food in an era of unprecedented risk.

Sincerely,

National Family Farm Coalition

Grassroots International

Agricultural Missions, Inc.

American Agriculture Movement, Inc.

American Corn Growers Association

Ashtabula County Farmers Union (Ohio)

Border Agricultural Workers Project (El Paso, TX)

California Farmers Union

Center of Concern

Community Farm Alliance (Kentucky)

Congregation of the Holy Cross; Coordinator
for Peace and Justice

Family Farm Defenders

Farm Aid

Federation of Southern Cooperatives/
Land Assistance Fund

Food and Water Watch

Food First/Institute for Food and Development Policy

Hispanic Organizations Leadership Alliance

Institute for Agriculture and Trade Policy

International Labor Rights Forum

Iowa Citizens for Community Improvement

Johns Hopkins Center for a Livable Future

Kansas Farmers Union

Maryknoll Office of Global Concerns

Missionary Oblates of Mary Immaculate Justice,
Peace/Integrity of Creation Office

Missouri Rural Crisis Center

National Catholic Rural Life Conference

National Farmers Organization

National Latino Farmers and Ranchers
Trade Association

Ohio Farmers Union

Organic Consumers Association

Rural Advancement Fund (NC)

Rural Coalition /Coalicion Rural Western
Organization of Resource Councils

International Call for a Coordinated Approach to Food Reserves

About the organization

The Institute for Agriculture and Trade Policy (IATP) works locally and globally at the intersection of policy and practice to ensure fair and sustainable food, farm and trade systems.

This paper was originally published by IATP in May 2010.

Originally featured on <http://www.iatp.org>.

Attn: Governments, UN Bodies and International Financial Institutions

We are writing to you to urge rapid and comprehensive action in the establishment of food reserves to end world hunger and help stabilize markets.

UN Secretary-General Ban Ki-moon has referred to hunger as “a stain on humanity,” requiring international coordination and leadership at the highest level. During the High-Level Conference on World Food Security in 2008, then again in L’Aquila, Italy and at the World Food Summit in 2009, governments have recognized the potential of stockholding to deal with humanitarian food emergencies and to limit price volatility, calling for a review of this issue as part of the coordinated response to the global food crisis. Unfortunately, little has been done to realize the potential of these proposals.

In 2010, we, the undersigned civil society organizations, remain concerned with the lack of activity from governments and institutions in exploring a system of food reserves on the regional or global level. Specifically, we call upon governments to honor their commitments for a comprehensive review of food reserves, incorporating lessons learned and identifying potential models, also allocating appropriate resources and setting a firm deadline for varying levels of implementation by the end of 2010.

It is time to take decisive action to address the structural causes of food insecurity and to prevent a repeat of recent food price spikes. Food reserves are a valuable tool in improving access and distribution of food. They can strengthen the ability of governments to limit excessive price volatility for both farmers and consumers. They can support farmers by helping them to predict their markets, and by redressing concentrated market power. They can contribute to local, national and regional markets, where resources are lacking. Importantly, buffer stocks can also compensate for shortfalls in foreign currency, offset supply shocks or spikes in demand, and facilitate humanitarian response to food emergencies. National, regional and international food reserves are particularly needed due to the reality of climate change and its impact on food production and supply.

As the comprehensive review is carried out, we believe the below steps can be taken by governments immediately to adopt a multilateral plan.

Specifically, we request that governments take these critical steps:

- 1. Increase foreign and domestic investment** to achieve culturally appropriate local and regional food security reserves. As donor governments seek to mobilize investment to strengthen national food security plans, food reserves should be a central plank of their foreign assistance and domestic agricultural policy agenda, taking special care that food reserve mechanisms do not undermine local food production systems.

2. **Lead efforts to establish an international commission on reserves**, such as one coordinated by the FAO Committee on Food Security, to make recommendations on the establishment of a coordinated global food reserve system.
3. **Support multilateral, regional and bilateral agricultural trade rules** that allow developing countries to invest in the production and infrastructure necessary to support food reserves.
4. **Renegotiate the Food Aid Convention**, ensuring that contributions towards food security reserves are counted as eligible to meet commitments in the Convention.

With the number of undernourished people in the world surpassing one billion we cannot afford a repeat of past mistakes that led to unprecedented price spikes in important food commodities. To address the multifaceted root causes of food insecurity, we ask that governments and institutions put the issue of reserves at the center of their policy considerations.

Sincerely,

Institute for Agriculture and Trade Policy (IATP)

Asian Farmers Association (AFA)

Collectif Stratégies Alimentaires (CSA)

National Farmers Union (NFU), USA

Asociación Nacional de Empresas Comercializadoras de Productores del Campo (ANEC), Mexico

National Family Farm Coalition (NFFC), USA

Reseau des Organizations Paysannes et des Producteurs Agricoles de l'Afrique de l'Ouest (ROPPA)

Canadian Foodgrains Bank

AAI-Latin America (Agribusiness Action Initiatives)

Action Aid International

Africa Europe Faith & Justice Network (AEFJN)

Agricultural Missions, Inc.

Asian Secretariat for the Development of Human Resources in Rural Areas (AsiaDHRRA)

CCFD-Terre Solidaire, France

Center for Health Policy and Innovation, South Africa

Center of Concern, USA

Centro Cultural Social y del Medio Ambiente Ceibo, Chile

Centro Ecoceanos, Chile

Church World Service

CIDSE

Community Alliance for Global Justice, USA

Compassion in World Farming, UK

Ecumenical Advocacy Alliance

Fair, Italy

FIAN International

FOCO Foro Ciudadano de Participación por la Justicia y los Derechos Humanos, Argentina

Food & Water Watch, USA

Food Democracy Now!, USA

Food Systems Integrity, USA Ghana Trade and Livelihoods Coalition (GTLC)

Forschungs- und Dokumentationszentrum Chile-Lateinamerika /Centro de Investigación y Documentación Chile-América Latina (FDCL), Germany

Global Policy Forum

Grassroots International

IBON International

IDEAR/CONGCOOP (Instituto de Estudios Agrarios y Rurales/ Coordinación de ONG y Cooperativas), Guatemala

International Gender and Trade Network (IGTN)

ISDE Bangladesh

Jagrata Juba Shangha (JJS), Bangladesh

Kentucky Interfaith Taskforce on Latin America and the Caribbean, USA

Labour, Health and Human Rights Development Centre, Nigeria

Malcolm X Center for Self Determination, USA

Maryknoll Office for Global Concerns, USA Red de Accion Ciudadana Frente al Libre Comercio e Inversion Sinti Techan, El Salvador

Mujer Rural y Seguridad Alimentaria de la Universidad Nacional de Colombia

Ngo M.A.I.S., Italy

Partners In Health, USA Presbyterian Hunger Program, Presbyterian Church, USA

Pesticide Action Network North America (PANNA)

PLANT (Partners for the Land & Agricultural Needs of
Traditional Peoples), USA

Platform ABC, The Netherlands

Red de Ambientalistas en Acción de El Salvador

Red Mexicana de Acción frente al Libre Comercio, Mexico

Robert F. Kennedy Center for Justice & Human Rights, USA

Rural Coalition/Coalición Rural, USA/Mexico

Share The World's Resources, UK

Social Concerns/Rural Life Office—Diocese of Jefferson City,
USA

Society Against Poverty and Hunger (SAPH), Nigeria

The Carbon Philter Institute, UK

The Corner House, UK

The Second Chance Foundation, USA

WhyHunger, USA

World Development Movement, UK

The Importance of Food Reserves in a Hungry World

Adam W. Parsons, Share the World's Resources

About the author

Adam W. Parsons is the editor at Share The World's Resources.

About the organization

Share The World's Resources (STWR) is a think-tank that advocates for natural resources such as oil and water to be sustainably managed in the interests of the global public, and for essential goods and services (including staple food, adequate shelter and primary healthcare) to be made universally accessible.

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Originally featured on <http://www.stwr.org>.

Although the issue of food stocks doesn't feature so prominently in popular media commentaries on the global food crisis, grain reserves could play a key role in moving towards food sovereignty, and in achieving food security on an international basis. Following the recent spikes in agricultural commodity prices, the issue of reserves has received increased attention from policymakers, and at the first G8 Agricultural Minister's Meeting in April 2009 a commitment was made to further examine options on global grain reserves, or what they termed "a coordinated approach to stock management." The issue is now clearly on the international agenda, but despite a variety of different proposals being made for globally-managed food stocks, there are still some very different views on how such a system could function either to help achieve food security, or to help stabilise markets.

To give some brief background, the history of food reserves is an interesting one especially in the United States. During the 1930s depression, the New Deal farm policy instituted the nation's first program of farm support not to feed a hungry nation, but to manage the surpluses of food that was being produced. To deal with the problem facing farmers of collapsing prices due to overproduction, a loan system was established for farmers who could store food in a reserve when market prices were low. This was a way of preventing cheap grain from flooding the market, and supporting the prices that farmers received. It wasn't until the world food crisis of 1972-4 that these supply management tools were progressively dismantled, and the system of subsidies was inaugurated in the Nixon era.

At this time, grain reserves were a key part of the discussions at the World Food Summit of 1974, and a Committee on World Food Security was established in the mid 1970s with the function of evaluating the adequacy of food stocks worldwide. Although they determined a minimum safe level of world cereal stocks, their proposals were never implemented. Instead, with the shift to market liberalisation policies from the 1980s onwards, many governments in developing countries were persuaded to sell off their public-sector grain reserves and inventories. Even in recent years, the IMF has continued to encourage the dismantling of state-managed food reserves in less developed countries. This process has gone hand in hand with so-called 'cheap food policy', or what's been dubbed the 'low-price-all-out-production-policy' in agriculture that has been adopted by most governments and characterised the past few decades.

The situation today is that we now face one of the tightest margins in recent history between food reserves and global demand, with global reserves estimated to be at their lowest level in 25 years. When food prices soared on international markets last year, decades of trade liberalisation has meant that governments were unable to intervene in the market to regulate prices and supply, while at the same time many developing countries no longer had sufficient productive capacity to meet domestic demand. To compound this situation, they were also left without sufficient reserves as backup. In response, despite the widespread rebukes against

“protectionist measures”, many governments are now building back up their reserves in an attempt to safeguard national food security.

The food price crisis has therefore underlined both the tragedy inherent in an overreliance upon market forces and the private sector in managing agriculture, and also the importance of government intervention through supply management policies. For this reason, re-establishing food reserves would go a long way to preventing a repeat of last year’s food crisis. Whichever way you look at it, whether it’s from a social or humanitarian perspective, from a political viewpoint or in terms of basic economics, the case for having domestic food reserves is incontrovertible.

What isn’t so clear is how a global system of food reserves could or should function. As with traditional grain reserves, their role could be broadly two-fold; on one level global reserves could regulate international commodity markets, and on another level they can be used to cope with emergencies on a global basis.

The case for a global reserve to be used for emergency responses and humanitarian assistance, managed independently by a UN agency like the World Food Program, has been proposed for many years by various NGOs. It’s argued that this could both prevent the need for the long and bureaucratic process of appealing for contributions at times of emergencies which can hinder the most effective international response; and it could also prevent humanitarian agencies like the World Food Program from needing to buy grains from the international market. As we saw last year, the WFP was being priced out of the market just like the millions of hungry people for whom it was trying to provide emergency food aid.

There are also various proposals for how a global food reserve could be used to make the free market in agricultural commodities function more smoothly. This could involve a virtual reserve or a financial fund, as in one recent proposal by the International Food Policy Research Institute, in which billions of dollars could be mobilised to intervene in the market when prices rise above a designated price band, in order to execute a number of short sells in futures markets around the world. This is proposed as one way of mitigating price shocks and reducing speculative commodity trade, and is one reason why the G8 countries and the World Food Programme, amongst others, have expressed an interest in this idea.

However, none of this addresses some of the deeper problems in agriculture such as the values inherent in a system that prioritises the export of staple foods for profit, or the concentration of market power in the hands of agribusiness, or the unequal access to resources for small-holder farmers and the poor. If we dare to envision a truly sustainable agriculture in which localised production and consumption is prioritised first, in which agro-ecological methods of production are the norm, and in which smallholder or family farming is the predominant means of producing staple foods, then the role of food reserves on a global scale could be quite different.

If staple foods are removed from international trade agreements, if they are protected from commodity speculation altogether, and if they are protected on a domestic level through appropriate government policies, then there would be less need for international supply management – at least in terms of protecting these essential staple food items. The main role then for global food reserves would be to ensure that basic needs are met in times of a food security crisis wherever it happens in the world.

Right now, the question of global food reserves is being discussed in the wrong context, and perhaps with the wrong outcome in mind. The G8 countries are investigating global stocks in order to prop up and perpetuate a system of free trade in staple agricultural goods – a system that has already removed all protection from price shocks for the poorest people, that has already dismantled those agricultural support policies that are crucial to the survival of sustainable small-scale farmers, and that continues to prioritise the private sector over policies that would benefit the growing number of the world’s hungry.

The context in which we should discuss the creation of an international network of food reserves should be as part of a new multilateral framework that facilitates self-sufficiency in staple food production at the local and national levels, and that supports smallholder and family farms. We could also consider the question of global food reserves in the context of the goal to progressively replace structural food aid by support to local agriculture.

In the end, providing adequate food for a billion hungry is not a stock issue, and it is not ideal to consider using reserves as part of an ongoing global welfare system. However, food reserves and international supply management policies could play a pivotal role in maintaining price stability for staple foods as a transition towards food sovereignty is made.

To achieve this, it's also clear that such a system of reserves needs to be managed by a politically independent global institution, ideally under the auspices of the United Nations.

Fortunately, we are not without a precedent for how to frame a discussion on these issues of protecting domestic staple food production, reducing the volatility of commodity markets, and promoting sustainable food systems over the long term. In the mid- to late-1990s, the Institute of Agriculture and Trade Policy (IATP) organised support for a Global Food Security Convention that was signed up to by 1,200 organisations from 80 countries. One reason that an international convention on food security (or even better, on food sovereignty) still seems like such a good idea is precisely because it provides the right context for discussing these questions of international supply management and global food reserves. Not only could it potentially elevate food security to the highest level of priority within international policy, but it could also set the necessary guidelines for governments to follow in pursuing the development policies necessary to eradicate poverty, achieve food security, and to create sustainable food systems.

Decentralised strategic grain reserves are needed to combat hunger crises

Dr. Chinwe Ifejika Speranza and Dr. Susanne Neubert, German Development Institute/Deutsches Institut für Entwicklungspolitik (DIE)

About the authors

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Dr. Susanne Neubert is an agricultural economist and environmental scientist.

About the organization

German Development Institute/ Deutsches Institut für Entwicklungspolitik (DIE) is a multi-disciplinary think-tank for German and multilateral development policy.

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Bonn, 11 October 2010. Just as households have food stocks to carry them over hungry seasons, communities, provinces and national governments in Africa should have food stocks to carry their units over lean periods. Multiple external and internal factors increasingly make food shortages more difficult to anticipate. Strategic grain reserves are thus crucial for avoiding food emergencies in Africa and earn much more attention and development policy support than it has hitherto received.

The multiple causes of food emergencies

The World Food Day on 16 October 2010 reminds us of our failure to reduce food emergencies. Compared to the past, when mostly local conditions were responsible for food shortages, global and regional factors have become more decisive. Many African countries depend on food imports. For example between 1998 to 2007 Benin, Burundi, Ethiopia, Mozambique, Niger, Rwanda, and Sudan spent more than 10% of their export earnings on food imports while Burkina Faso spent 20% and Guinea-Bissau as much as 40%. This exposes them to global food price volatility such as in the 2008 food crisis. Exposure to production risks in the exporting country such as the recent droughts and wild fires in Russia are nowadays connected to events such as the hike in bread prices in Mozambique. This could be in addition to currency shocks in the food importing country. This multiple exposure therefore requires various instruments. No doubt, Sub-Saharan African countries need to increase their agricultural production and productivity, but one important instrument to manage food scarcity is to hold a strategic grain reserve.

The case for strategic grain reserves

The UN Food and Agricultural Organisation recognises the primary function of a strategic grain reserve in helping to cope with food emergencies. However, grain reserves are also used to stabilise grain prices and sometimes, for providing grain-loans to organisations or countries. Such reserves can be in physical grain or financial reserves. Physical reserves aim to meet national food shortfalls, whereas financial reserves are set aside to meet the purchase of a pre-defined amount of food should the need arise. Some countries hold both types of reserves. Yet, reliance on imports presupposes that a country has enough foreign currency reserves to purchase food, that food is available at that particular moment in the world market, that a loan request can be granted and that the ordered food arrives in time.

However, grain reserves are controversial and highly politicised. This is partly due to their rather poor performances in guaranteeing fast and adequate response during food crises and due to their potential to distort market prices. Yet, several

African countries hold grain reserves as a way to buffer food supply shortfalls. Despite this benefit, donors have given strategic grain reserves little attention. This reflects the divergences in the understandings of international development policy and national policies on the importance of holding a physical grain reserve. However, the UN World Food Programme is exploring setting up regional reserves as a form of prepositioning food stocks.

A good policy with a poor performance

Governance problems including mismanagement and corruption have beset many grain reserves. The question is whether the poor performances should be argument enough to discard the good instrument. Solutions should rather be sought to ensure that the instrument delivers its promises of buffering hunger. Joint commercial ventures with the private sector or complete privatisation of reserves may be viable options, as they exist e.g. in Zambia in the framework of warehouse systems. Continuous monitoring can ensure that policy guidelines are followed. The management could be decentralised so that each local government area can decide over its own food reserves. The national level could then do the coordination.

The case for decentralised grain reserves

A decentralised strategic grain reserve ensures food availability within a short distance of the affected. Those at the local level are more informed about the evolving situation on the ground. This reduces over-dependence on the national early warning systems.

Decentralisation reduces the lump risk facing single national reserves from corruption and mismanagement, fire, theft and pest infestation. As a transparent system it includes peer-monitoring and makes each unit answerable when food stocks disappear, are prematurely sold or due procedure is not followed. It thus becomes easier to control for the concentration of power in a few hands and to penalise those who mismanage their stocks. Thus, the inclusion of the major media into the monitoring team is desirable as this will increase transparency. Publicising the food balance sheets of each local grain reserve can be an effective check against corruption.

Decentralised reserves also allow for storing cheaper and more locally appropriate food. Most food-aid donated is “tied” to a donor agenda. Certain donor-countries also tend

to give food aid when they have food production surplus, and when global grain prices are low. Decentralising can thus weaken this linkage and give food-deficit African countries the freedom to choose where and when to get their reserves – food aid then becomes demand driven rather than supply driven. It therefore has potentials to reduce the misuse of food aid for politics.

More development policy support needed

Decentralising reserves redirects attention to the challenge of post-harvest processing which is an important aspect of food security. Even countries that have production deficit sometimes do have surpluses, which waste due to inadequate storage structures. Often farmers also produce surpluses, which they are forced to sell cheap because they need cash. Holding such farmer stocks in communal grain reserves which may also be integrated in crop index insurance packages will go a long way to improving food security.

If well managed, grain reserves increase the sphere of action of the government and increase buffer capacities. While the grain reserve scandals in Africa frustrate donors and reinforce their negative attitude, this discouraging record should not be an argument for ignoring this tool. Ensuring good governance is crucial and as we control for poor governance by central governments, there should also be a control for rural elites in decentralised reserves. Development cooperation should support national governments to deal with the mismanagement issues reported; to decentralise reserves to sub-national levels, and introduce measures that ensure that the food gets to the intended targets.



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