



A Threat to Global Stability

By Lester R. Brown

Past food crises have been largely event driven. The current crisis is starkly different, writes legendary environmental thinker Lester Brown. It is the result of global trends that threaten to pose long-term challenges to food supplies, raising the specter of social unrest in many parts of the world.

The time to act is now.

THE CURRENT FOOD SITUATION is unlike anything we've seen before. Over the past half-century there have been surges in grain prices, but they've always been event-driven—the poor harvest in the Soviet Union in 1972, for example, a monsoon failure in India or a crop-withering heat wave in the Midwestern United States. But this current surge in grain and food prices is driven not by an event, but by trends. The worldwide record increase in grain and food prices is accompanied by signs that the social order is breaking down in some places.

In Thailand, for example, there has been an outbreak of rice rustling—harvesting ripe fields in the middle of the night before the legitimate owner can reap the crop. This is happening in five rice-growing provinces in Thailand.

In Darfur, there is an extraordinarily difficult situation. The World Food Program, which is responsible for getting food to the 2 million people in the refugee camps, has to truck food into Sudan through Libya. During the last three months, 56 of their grain-laden trucks have been hijacked. Although they've recovered 20 of the trucks, 24 drivers are still unaccounted for. This disruption has roughly cut in half the food going to the camps and could lead to widespread starvation if security cannot be guaranteed.

In mid April, riots broke out in Bangladesh as some 10,000 textile workers went on strike because the price of rice had doubled while their wages remained stagnant, putting them in an impossible situation.

Today's global food dilemma is different in three important ways from previous sharp price

rises. First, as mentioned earlier, it is not driven by an event such as a poor harvest in a major food-producing country. If it were, then the challenge would be to make it to the next harvest, and most countries have various strategies for handling these short-term circumstances. But the current situation is trend-driven and this is new; the trends are well established, are gaining momentum, and have a cumulative effect on the world food balance.

Second, the current situation is not temporary; it is going to last for some time. How long will depend on what governments are able to do and how effectively they can mobilize to deal with the causes of the problem.

The third difference is that the current price surge affects more people than other inflationary bursts have in the past. One reason is simply that it is affecting the entire world and there are more people in the world. For example, in 1972, when the Soviets had a poor harvest and secretly cornered the world's exportable supplies of wheat, world wheat, corn, and rice prices doubled, but China was not part of the market then. Today, China—indeed every country in the world—is integrated into the world food economy and is therefore affected by price rises.

HITTING THE POOR THE HARDEST

The other thing to keep in mind is that the poor are affected much more than the rich. One reason is that in the industrial countries there's so much processing in food that it minimizes the effect of rising commodity costs on the final food product. For example, I pay \$3 for a loaf of whole wheat bread in a local supermarket. That loaf of bread contains maybe 30 cents worth of wheat. If the price of wheat doubles, then the loaf of bread will cost me \$3.30. Not a huge increase. But if you live in northern India or in Pakistan, and you buy your wheat in the market as wheat, grind it into flour and make chapattis, then when the wheat price doubles your food price doubles. Or consider rice. There's almost no processing involved with rice. The rice that's in the world market and the rice that one carries home from the market is essentially the same rice.

Another reason the poor are affected more is that the share of income that is spent for food varies widely between affluent and low-income countries. In industrial countries, roughly 10 to 20 percent of income is spent for food. In low-income countries, however, it can easily be 60 percent or more. So when the price of food doubles hundreds of millions of people are going to be caught in an almost impossible situation.

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When prices tighten, a politics of scarcity emerges. This has happened many times before. Exporting countries begin to restrict exports or even ban them in order to keep food prices down domestically. Among wheat exporters, Russia, Argentina, Kazakhstan, and Ukraine are now all restricting exports. With rice, Vietnam, Cambodia, and Egypt have restricted rice exports, at least in the short term. This makes the world market even tighter.

We've also seen the emergence of bilateral food agreements again for the first time in many years where a country like the Philippines, for example, that imports rice will try to work out a special agreement with an exporting country, in this case Vietnam, to provide an assured amount of rice in the years ahead.

One of the more novel approaches to securing food supplies has come from Libya, which imports most of its grain. The government of Ukraine has agreed to lease 100,000 hectares (247,000 acres) of cropland to Libya for growing grain that will be shipped to Libya.

I mentioned earlier that this situation is trend-driven; it's systemic. On the demand side, we're adding 70 million people a year to the world's population and will continue to add, according to projections, almost that many per year until mid century. You don't have to be an agronomist to understand that if you keep adding 70 million people a year to a finite resource base, i.e. the earth itself, you're headed for trouble, and a lot of countries are in trouble now on the food/population front. The second trend, which is not new but has become more important in recent years, is that there are some 4 billion people in the world who want to move up the food chain, consuming more grain-intensive meat, milk, eggs, etc.

AN ETHANOL EXPLOSION

The third trend is one that has literally exploded in the last few years—the use of grain to produce ethanol in the United States. From 1990 through 2005, the growth in grain consumption was about 20 million tons a year. Over the last two years, it has jumped to about 50 million tons a year, the difference being roughly 30 million tons per year of additional grain being used to produce ethanol from the 2007 harvest and roughly the same amount in the 2008 harvest. Stated otherwise, in the last few years the growth in world demand for grain from US ethanol distilleries has exceeded the growth in world demand for grain from all other sources. It is a huge new factor in the world market, and it is one reason why farmers are struggling so much.

On the supply side, we're losing a lot of cropland, particularly in major grain-producing countries like the US, China, and India. Whether it is housing developments moving up the Central Valley in California or thousands of new factories in the Yangtze River basin in China, this development eats up a lot of prime

cropland and directly affects the world's food supply and demand balance.

In addition to losing existing cropland, there's not much new land that we can bring under the plow unless we clear tropical rainforests in the Amazon and Congo basins or Indonesia. The other option is clearing more land in the Brazilian cerrado, the savannah-like area south of the Amazon basin. World population continues to grow, but the cropland area to support that growth does not.

Another resource being depleted is water. This is an issue that is largely below the radar. It has not been discussed much in the thousands of articles that have been published on the tightening food situation recently, yet water is one of the keys to future food security. Let me just mention what's happening very quickly in four countries.

In Yemen, with a population of 22 million people, the grain harvest has declined by 60 percent over the last 25 years or so because it is losing irrigation water as its aquifer is depleted. On the other end of the scale is China. Its wheat is produced mostly in the northern half of the country where water tables are falling everywhere. China's wheat harvest dropped from a historical peak in 1997 of 123 million tons to 106 million tons last year, a 16 percent decline, largely because irrigation water has been lost.

A World Bank study has pointed out that in India 175 million people are being fed with grain produced by overpumping. You can get away with this in the short run, but as the aquifers are depleted we are likely going to see a decline in the grain harvest in India, a country that's adding 18 million people a year.

Saudi Arabia announced in January that they are depleting their water resources. They've been pumping heavily from a fossil aquifer a half-mile below the surface. They plan to phase out all irrigated grain production by 2016, reducing the crop by one-eighth each year over the next eight years. After that they will have to import all of their grain.

These are just some of the examples of how water is affecting world food production, but it's

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going to be a major factor in trying to work our way out of this current, very tight situation.

DECLINING YIELD GROWTH

The third factor after land and water is technology. The backlog of unused agricultural technology is dwindling. From 1950 to 1990, the world's farmers raised grain yields by 2.1 percent per year. From 1990 to 2007 this dropped to 1.2 percent per year. We tend to turn to genetically modified crops as the answer, but there are no genetically modified crops that have been developed over the last 20 years that have had or will have much affect on yield. Scientists have been very good at developing insect-resistant varieties so we can eliminate the use of insecticides, but we have not had any dramatic advances in yields, nor are we likely to get any, simply because we're already pressing against the limits of plant physiology.

In seven of the last eight years, world grain consumption has exceeded production. This means we've been drawing down stocks. We're now down to 55 days of consumption—this is in carryover stocks—the amount of grain left in the bin when the new harvest begins, and it is the lowest on record. In essence, we are one poor harvest away from chaos in world grain markets.

In the past, farmers who responded to higher prices have expanded production, but in many parts of the world doing that now means over-pumping water or plowing marginal land. It's interesting that the commodities market is now beginning to recognize this. If you look at wheat or corn futures for November and December, they are higher than they are for, say, May or July, which means the market expects this tight situation to continue even after the next harvest.

WHAT IS TO BE DONE?

What do we need to do? The most important thing in the short run is to restore some stability to world grain markets and the world food economy by reducing the amount of grain going into fuel for cars in the US—that's something the US government must do. This issue has to be dealt with, and it means we have to deal with the causes.

Demand for grain is simply outrunning water supply, which is why half the world's people now live in countries where water tables are falling.

The next important step after reducing the amount of grain going to fuel in the US, is stabilizing population—and sooner rather than later. Stabilizing population means attacking the poverty issue as well as providing reproductive healthcare and family planning services. The third thing we need to do, and this needs to be a worldwide effort, is to raise water productivity. We need an initiative like the one that was launched a half century or so ago to raise world land productivity in the face of rising global population but did not have much new land to bring under the plow. As a result of that initiative, world grain yield per acre has nearly tripled since 1950. It's been a remarkable achievement and we now need to do something approaching that with water.

Hundreds of millions of people are currently trapped between rising food costs and low wages, and they're becoming desperate. World Bank President Robert Zoellick reported recently that the first government has fallen as result of food. That was the dismissal of Prime Minister Jacques Edouard Alexis in Haiti because the

Haitian Senate felt he had not adequately addressed the issue.

This situation is systemic and basic trends must be altered and in some cases reversed; that's going to be difficult and it makes this crisis different from those in the past. We're seeing spreading social unrest and political instability in scores of countries in the world. The list of failing states, which was already getting longer year by year, is likely to increase dramatically as governments face potentially unmanageable food shortages. The question then becomes, how many states must fail before civilization itself begins to unravel?

The risk is that a worsening food crisis could lead more countries to turn inward and try to deal with their problems internally, particularly the grain-exporting countries. This could create a degree of instability that we have not seen in peacetime before. That's the real nature of this challenge, and I don't think that the world, and certainly not Washington, has yet to realize the dimensions and the seriousness of the problem.

Lester R. Brown is president of Earth Policy Institute and author of *Plan B 3.0: Mobilizing to Save Civilization*, which is available for free downloading at www.earthpolicy.org. This article is based on a press teleconference he gave on April 16, 2008, on the world food situation. More details and data can be found at www.earthpolicy.org.