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The Global Food Crisis: Causes and Solutions

May 14, 2008, 9:30 AM

Senate Foreign Relations Committee

Let me begin my comments by saying we have an immediate problem that must be addressed, hopefully in a way that does not complicate long-term solutions. We also have a long-term and more complicated agricultural problem that the world has neglected over many years. A major, long-term recommitment is needed. The world's population will continue to grow rapidly and we hope and expect that incomes will grow rapidly in several parts of the world. All of this means a greater demand for food.

The Committee asks that I comment on:

- How did we reach this crisis?
- What should be the short-term response?
- What should be the steps taken to address the medium- and long-term problems of high food prices and food insecurity?

How did we reach this crisis?

A number of factors have contributed to the great jump in food prices, but the problem has been long in the making.

Decades ago many felt we were going to run out of food and forecasted greater famines. In the 1960s there were still famines in India and China. The global think tank the Club of Rome warned of pending food disasters in the 1970s and some said that Thomas Malthus' principles on population were right after all. However, the Green Revolution and other advances in technology and production methods and related investments in agriculture greatly increased production in important areas of Asia and parts of Latin America. Arguably more lives were saved by the Green Revolution than almost any event/technology in history.

In the decades following the Green Revolution, the marvel of the new technologies that produced food abundance was taken for granted. The world assumed that further new technologies were not needed or would be generated without investment. The quote "There is plenty of food on the planet, it is just a problem of distribution," was heard in donors' halls. Varieties and production systems were not innovated nor adapted for dry and marginal lands that were brought into production as a means of increasing food supply. Governments and most international organizations cut back on agriculture development expenditures in developing countries. In 1990 about 12 percent of global Official Development Assistance (foreign aid) went to agriculture, now it is about 4 percent. In the early 1980s 30 percent of the World Bank lending was for agriculture but by the early 2000s it was down to 10 percent, despite the fact about 75 percent of the

world poor are live in rural areas. The U.S. Agency for International Development's (USAID) reductions in commitment to agriculture was comparable.

This reduction in agriculture assistance was part of a bigger pattern. The donor community, especially the bilateral donors, shifted its focus from long-term development investments into more short-term interventions.

However, world population increased year by year and food demand continued to increase. Incomes in developing countries increased, especially in the high population countries of Asia. Higher incomes meant people could afford more food and changed their diets to include more meat, dairy products and processed foods. All of these products require more energy from cereal crops to produce than if the cereal crops were eaten directly by humans. The result has been a dramatic rise in the global demand for cereal crops. The dramatic increases in income in China have had a huge impact.

Further, agriculture around the world is often a subsidized and controlled industry. That practice has restrained market forces from driving comparative cost and production advantages. The subsidies that drove production up in some countries reduced production in others that could not compete with subsidized food.

Additional pressures have emerged recently.

Using corn to produce biofuels increases the demand for corn and appears to increase its price as well. My understanding is that this is roughly the view held by the USDA's Chief Economist. It is not easy to sort out biofuels' impact on food prices. I note that the International Monetary Fund's *World Economic Outlook* states that biofuels account for almost half of the increase in consumption of major food crops in 2006-2007.

Higher fuel prices have increased food production costs. For example, high energy costs greatly increase the costs of producing fertilizer, transporting food and operating farms.

Troubled bond and security markets have increased the money flowing into commodity markets. Liquidity and depth in the commodity futures markets are generally forces of stability over time and therefore positive influences in the longer term for users/consumers and farmers/sellers of grains. Accordingly, we have to take care in imposing regulations of these important markets so we do not distort their positive contributions to the stability of commodity trading.

Grain reserves have declined from a high of 100 days of global consumption in 2000 to 55 days currently and that has created a greater sense of market risk and an inability to buffer market fluctuations.

There is drought in Australia and new export restrictions by a number of governments that do not allow markets to function efficiently.

All of these and more have produced the food price crisis.

What should be the short term response?

In determining the appropriate response we need to realize that “Food crop prices are expected to remain high in 2008 and 2009 and then start to decline as supply and demand respond to high prices; however, they are likely to remain well above the 2004 levels through 2015 for most food crops. Forecasts of other major organizations (FAO, OECD and USDA) that regularly monitor and project commodity prices are broadly consistent with the projections.”^[1]

Clearly donors should provide a substantial amount of food and the World Food Program (WFP) has called for that support. This need will not be just for 2008 and so planning should be done accordingly. The WFP and USAID have substantial experience in delivering food to the most needy. This is difficult to do right. For example, needy pregnant mothers and very young children should get food or vouchers to buy food because food deficiencies of the unborn and very young are most likely to cause lifelong damage. It was always a challenge to be sure that the right schools got the food when I was a Peace Corps Volunteer in Peru in the 1960s working in the Food for Peace school feeding program. It was too easy for the food to go to middle-class communities that had the most political power.

Buying food in the developing world should be done without greatly increasing prices in the region of purchase. Purchases should be done as practical to provide a market for surplus production in the region's poor countries. Achieving this balance is a challenge. The WFP and USAID need to be given great flexibility in where they purchase food. Food relief efforts should not only feed the needy, but also help build regional trade and encourage production in poor countries.

Great care should be taken so responses to the crisis do not hinder longer term increases in production in developing countries. Free fertilizer, for example, can be another way of providing next year's donor food. However, there can be serious long-term consequences of such an approach to sustained development. I will address this tradeoff below.

Higher prices should quickly increase production in the developed world unless there are artificial constraints on doing so. In some countries, mostly developing countries, there are food export constraints. *The Washington Post*, in a May 11, 2008, editorial, reported that "More than 40 countries have taken steps to discourage grain exports—or to stop them altogether." Such constraints will hurt market operations and limit comparative cost advantages for the global food markets and should be discouraged.

Generally there will be some increases in production in developing countries in response to higher prices. Orville Freeman, President Kennedy's Secretary of Agriculture, advised me when I was USAID Administrator in the 1980s, “I have known farmers that could not read or write but I have never known one that could not add and subtract.” Nevertheless,

^[1] Paper of the World Bank, "Rising Food Prices: Policy Options and World Bank Response," April, 2008.

many developing countries will have capacity issues that will prevent a full response, e.g., lack of farm to market roads, technology, fertilizer, appropriate varieties of food plants, etc. I will explore how to deal with these issues below.

What should be the steps taken to address the medium and long term problems of high food prices and food insecurity?

Commitments and Resources

To deal with this situation there needs to be a recommitment by developing countries, international organizations and other donors to increase agriculture production and rural income in the developing world. About 75 percent of the worlds poor live in rural areas of developing countries, and these people need to produce more food. Africa is a major case in point. More than 60 percent of the people of Sub-Saharan Africa live in rural areas and a large portion of those people are poor. It is clear Africa needs more agriculture production and income to feed its people and the world needs to increase food production and supply to meet an ever increasing demand.

Developing countries, particularly those with large rural populations, need to use the food price crisis to reaffirm their commitment to more food production. A few years ago African heads of state committed to increase expenditures of their national budgets dedicated to agriculture to 10 percent. While the pledge was a substantial increase for many countries and has not been reached by most, strong action by national governments to support increased agriculture production and rural income is essential if the food crisis is to be successfully addressed.

The World Bank is substantially increasing its commitment for food production in Africa after many years of decline. The International Fund for Agriculture Development (IFAD) is also working on agriculture issues very effectively. It is in the process of putting together its next replenishment and deserves support.

The Millennium Challenge Corporation (MCC) is finding that countries are asking for a different portfolio than the priorities in the USAID budget, and one of the big differences is in requests for substantial help with agriculture. (MCC could be more effective if their agriculture and other programs could have a longer term horizon than five years. Also MCC money should be able to be spent on regional projects, e.g., transportation linkages that are often regional. Such regional expenditures are currently not allowed).

If the United States is to help solve this food crisis, as it helped in the past, USAID must return to a greater commitment to agriculture. The 2008 allocation of USAID includes, as I understand it, no allocation for core funding for the CGIAR, the international agriculture research centers. (One of those centers is located in Washington, the International Food Policy Research Institute [IFPRI] and is providing excellent analysis and policy advice on the food price issues). Funding for Title XII: Famine Prevention and Freedom From Hunger Improvement Act that engages U.S. universities in building

agriculture capacity in developing countries to generate new means of food production is funded at only a small fraction of resources allocated in 1970s and 1980s.

In fact agriculture assistance has been substantially reduced in the USAID budget over at least 15 years. (There was a limited increase in the early years of this Administration under the leadership of the former USAID Administrator Andrew Natsios.) There were further major cuts in the 2008 budget and the 2009 budget submitted by the Administration does not appear to increase agriculture above 2008 levels.

However, the President recently requested a food supplement bill that includes \$150 million for long-term agriculture work. USAID Administrator Henrietta Fore is strongly supportive of this increase, and this Senate Foreign Committee hearing is important to highlight possibilities.

The historical global pattern has been that if the World Bank and USAID moved away from an area of investment other bilateral donors followed. Consistent with that pattern, bilateral donors' interest in agriculture declined dramatically over the years. The World Bank and the United States should lead the way back to sustained and substantial support for long-term agricultural development. Such a step by USAID would signal a renewed commitment to the fundamental elements of development. In recent years USAID monies have increasingly been used to respond to critical immediate needs with goods and services. I trust that most people at USAID believe producing more food in the developing world is central to healthy and better lives and would welcome additional resources for those purposes.

Foundations, NGOs and the private sector have become substantial factors. The Bill and Melinda Gates Foundation is providing leadership on agriculture issues in Africa. U.S private contributions to the NGO work in Africa in recent times have perhaps equaled the contributions of the U.S. government and NGO contributions will continue to grow.

Of great importance is emerging leadership from African countries. The African Union and NEPAD have developed the Comprehensive African Agricultural Development Program (CAADP) as a framework for coordinating assistance around strategic national and regional priorities. When practical, donors should support African-led efforts as suggested in CAADP.

Programs

I will focus my comments here on Sub-Saharan Africa because the need for more food production is so great in Africa and, while parts of Africa like Southern Africa have the potential to be major grain exporters, Africa overall is a net food importer. More than 60 percent of the people in the region live in rural areas with agriculture being the primary source of income for many living there. Grain yields have stagnated for 45 years and current yields of cereal crops are about 30 percent of world averages.

There is no single magic bullet to solve Africa's food crisis. Each country and region has different histories, strengths, weaknesses, and challenges. There are, however, some

lessons that stood the test of time. I would classify the lessons into two broad categories: 1) efforts that support and encourage developing the whole country or region, including rural areas and 2) agriculture-specific assistance. Obviously these categories overlap. All of these efforts need to be led by Africans at the country or region level or they probably will not work. Donors need to provide strong support for African-led solutions.

At the country level, the national leadership needs to be committed to broad-based economic growth and poverty reduction. That commitment must include an effort to improve food production and rural incomes. The commitment should also include mechanisms that allow the broad input of society into major government decisions. Sound economic policy is essential. It is hard to make progress with 100 percent inflation. There needs to be the rule of law, ease of entering business, and legal title to real estate including farms. The work of Hernando De Soto on legal systems and property rights is instructive in this regard.

The country and donors need to foster and invest in appropriate infrastructure. Major infrastructure projects can change or overcome the history of a region. The Zambezi River divides Mozambique and the bridge being built over the river will tie the country and its markets together as never before. (The story of our Erie Canal is instructive. It was built in the 1820s and opened up the Midwest. The Erie Canal made Michigan wheat part of the international wheat market, so when the Crimean war in the 1850s increased world wheat prices, Michigan land prices increased too.) In Africa new and revitalized corridors (rails and roads) to transport minerals and agriculture goods are being built or are under consideration. Most of these corridors involve more than one African country and so donors, including the United States, must consider this in their assistance programs. These corridors are complicated and to be successfully completed will take many donors working together. The African Development Bank is taking a leadership role. The Hewlett Foundation and the Partnership to Cut Hunger and Poverty in Africa are working to encourage the full agriculture development impact of the corridors.

There is no question that cell phones and internet connectivity increase the flow on knowledge and increase economic growth. (The World Bank has announced that they will invest billions of dollars in connectivity in African over the next few years.)

Electrical power to communities also has a dramatic impact. We need to remember our own fairly recent history with the impact of the Tennessee Valley Authority (TVA) and Rural Electric Cooperatives.

Primary, secondary and higher education are needed to build a country, including a strong agriculture sector. Educated people drive progress in the private and public sector. Development is about helping such people get the knowledge and tools they need so their work pays off. The creativity, energy and drive of people are the most important sources of power for economic growth, but are too often forgotten or thwarted by governments and donors.

The National Association of State Universities and Land-Grant Colleges (NASULGC) is undertaking a substantial effort to rebuild and expand partnerships between U.S. and African universities to address this human and institutional needs. USAID has provided some planning money for this effort. The number of students in colleges and universities in Africa has doubled in about 15 years and will continue to grow rapidly, but African higher institutions are not yet capable of absorbing these students and hence not yet capable of capturing the creativity of their national intellectual capital.

Trade has a major role to play, including gains that might be made in the Doha round. Perhaps even more important for Africa is regional trade. African regional trade has not been part of the Doha discussions, as regional trade is traditionally not part of international trade rounds. In this situation that is unfortunate, though it would be complicated. There is some progress with regional trade agreements, e.g., East Africa, but most regional trade discussions are slow and unsteady. The transportation/development corridors mentioned above will help increase regional trade and will put pressure on governments to reduce trade barriers.

In order to take advantage of current and future trade openings, many African countries need help in training and working through safety requirements and other standards. Meeting standards can often be demanding for small farmers even for in-country sales, especially as supermarkets take a growing share of local food sales. Farmer organizations/cooperatives can often play a major role in helping farmers meet standard and marketing.

As for efforts that are more agriculture specific, there are a number of related needs.

Farm-to-market roads are required to bring in seed and fertilizer and take out production. Such roads also connect rural communities to goods and government-provided services. These connections bring quality teachers for basic education; health care to address diseases such as malaria and HIV/AIDs; security and banking that allow markets to function more efficiently; and a range of other national services frequently absent in the rural context.

Farmers need seed and fertilizer, and fertilizer costs have risen dramatically in recent times. There is a great debate in the development community on how to provide these inputs, particularly fertilizer. One group argues for free or nearly free fertilizer to kick start production and provide food. The other group, composed of a large portion of the agriculture development professionals, argues that free fertilizer will often be sold by farmers instead of used and will destroy commercial distribution systems and/or prevent such distribution systems from emerging. While such systems are needed to sustain effective fertilizer distribution, there is a long history in Africa of failed government distribution systems. Many agriculture development experts argue that, once established, huge subsidies will be politically impossible to reduce. These expenditures will probably crowd out other important investments by the governments in rural areas, e.g., roads, schools, etc. Some note that this year India will spend about \$20 billion dollars on

fertilizer subsidies and some of that money would probably be better spent on longer term investments.

I am concerned about free or nearly free fertilizer for reasons suggested above. Free fertilizer is an even bigger problem when it is distributed by governments. Properly structured voucher programs can be used wisely. Vouchers can be sold at a discount (not free) or earned by targeted groups of farmers and then redeemed for fertilizer from a commercial dealer. Such an approach supports and strengthens commercial distribution systems. Moreover, it is somewhat easier to reduce the subsidy over time when there is no direct government distribution.

A related issue is financing for farmers. There is no question that farmers and rural businesses need credit. Local moneylenders are often expensive and do not have enough capacity for the local needs. Government-owned farm credit banks in Africa have a long history of failure because farmers often do not think they have to repay government, and frequently politicians have encouraged farmers to treat the credit as a resource transfer. In some countries private banks are getting stronger and South African banks are now doing business in many African countries. A practical option may be for governments and donors to extend money to such banks to be lent out by the banks, with those banks incurring some real portion of the risk of nonpayment. These are complex arrangements to put together and may be more applicable for credit to rural businesses than for credit to farmers. (Note: Rural businesses are an important part of rural economic growth and increased local food production.) Another way to extend credit is through the commercial seed and fertilizer distribution systems. Such commercial entities also must bear part of the risk of nonpayment but these entities can insist upon payment for the credit extended the year before in connection with extending credit for this year's seed and fertilizer. I should note that micro credit has an important role in rural Africa but their loans are usually small.

It should also be pointed out that a majority of farmers in Africa are women and they must have equal opportunity to services like fertilizer, credit and education.

Creating new technology for African production is important. No doubt some technologies exist that are not being used or fully adopted. These opportunities must be exploited. However, we have never had a Green Revolution for Africa. While this may be more complicated in Africa because of its diversity of soils, climates and crops, it is achievable if Africans and donors invest in research that is required to produce a new wave of varieties, breeds and technologies to transform African food production.

CGIAR and U.S. universities have a major role to play in this research. Their funding should be increased along with increased accountability. I expect for CGIAR this will mean continued change in the organizational structure under its able leadership and for U.S. universities, new innovative partnerships.

The research needed includes a substantial effort with fertilizer especially in Africa where soil fertility is a major constraint on productivity. Major fertilizer products currently used

by farmers were developed more than three decades ago. These fertilizers were designed in an era of energy abundance and their utilization rates by plants are low. For example, plants utilize urea at only about 30 percent efficiency. This inefficiency is alarming given urea is the dominate form of nitrogen fertilizer used globally. The energy equivalent of about four barrels of oil is needed to make one ton of urea, and so about 2.8 barrels of oil are wasted for every ton of applied urea. Phosphate, a primary nutrient needed for plant growth, is produced from phosphate rock using highly inefficient processes. In short, the world needs a major research effort to improve the effectiveness of fertilizer production and use. Fertilizer is a commodity industry and it is unlikely the industry alone will undertake the research. Some public investment is probably required. I chair the board of IFDC, an international organization based in Muscle Shoals, Alabama and long involved in fertilizer issues.

Biotechnology holds great promise to provide the varieties necessary to match Africa's diverse environments and needs, and to do so rapidly and efficiently. Its strength is its ability to produce variability rapidly and precisely. I want to underline that biotechnology is only one of the many research tools needed and it should be used carefully and selectively. Perhaps the food crisis will make biotech crops more acceptable. Of course, the use of biotech crops must be properly regulated and African countries or regions working together should develop the capacity to have their own regulatory oversight and decisions on biotech plants.

Extending new knowledge to farmers in Africa is a challenge. Personnel intensive U.S. style extension systems have not been financially sustainable in most of Africa. New combinations and approaches to extension include the use of computer information centers in villages, solar powered computers and cell phones to gather and exchange market prices around the country, and more and better radio use since most people have radios. Some of this is location specific. (Note: For extension to work you need to have knowledge or technology that really adds value to the farmer. They are usually smart about what they can do in their environment with their technology.)

I mentioned universities as part of building a country. The agriculture education and the problem-solving capacity of African universities deserve a comment here. Ideally teaching, extension and research should be organizationally tied together, a design that has worked well in U.S. land-grant universities. Universities need to train people who are capable of creating, working and leading the development of a sophisticated agriculture sector. Only then will Africa significantly increase its food production.

Conclusions

The food price crisis had some immediate causes but there have been pressures on demand for some time. In brief the world neglected the long-term development needs of agriculture for many years.

Immediate relief is needed and I support supplemental funding for that purpose. Short-term relief should not be undertaken in ways that will complicate the long-term solutions.

Dealing with the medium- and long-term food prices will require a major recommitment by developing countries and donors. I support supplemental money for long-term agriculture development as part of that recommitment. This is a huge and complicated job for everyone that needs to be lead by the developing countries themselves. We will need to continue to work on these matters for the foreseeable future because world population will continue to increase and incomes will go up substantially, especially in some parts of the world. We have a long-term supply side problem. All this work will need to be done in a period of global warming and other environmental issues.