

**The Global Food and Nutrition Situation:  
Implications for the 2012 Farm Bill**

**Statement by**

**Per Pinstrup-Andersen**

**H.E. Babcock Professor of Food, Nutrition and Public Policy**

**Professor of Applied Economics and Management, and**

**J. Thomas Clark Professor of Entrepreneurship**

**Cornell University, Ithaca, New York**

**[pp94@cornell.edu](mailto:pp94@cornell.edu)**

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Recent fluctuations in international food prices have drawn attention to the global food situation and generated much debate about what the future will bring. Food riots have caused instability in many developing countries and the number of hungry people is increasing. Questions are raised about the ability of the world to feed future generations without doing damage to natural resources. Whether recent developments are a short-run blip in a long-run trend of stable food prices or the beginning of a new long-run trend of increasing and volatile food prices and more hunger is hotly debated. In this statement I will discuss six issues related to the global food situation that I believe should be considered in the preparation of the 2012 Farm Bill.

**First**, U.S. agriculture is and will continue to be a very important source of food for the world's population. The value of the United States agricultural exports has doubled during the previous eight years to \$115 billion in 2010. This amounts to about 10 percent of the value of all U. S. exports. Most of it went to developing countries. Eight of the 10 top importers of American wheat and corn were developing countries as were seven of the top importers of American soybeans. Continued population growth in developing countries means increasing food needs. Although the population growth rate is on a decreasing trend, the world population will increase by more than two billion over the next 40 years, from the current 7 billion to about 9.3 billion by 2050. The population growth is projected by the United Nations to continue to about 10 billion by 2100.

Rapidly increasing demand for foods of animal origin leads to increasing demand for feed such as soybeans and corn. Desires for dietary diversity in low-income developing countries will expand the demand for wheat. Current estimates are that the demand for food and feed will increase by 70 percent by 2050. Success in efforts to promote economic growth in low-income developing countries will further expand demand for U.S. food exports. About a billion people (more than three times the total U.S. population) cannot afford to obtain the food they need to meet requirements. If they earn more, they will buy more food. Thus, successful poverty alleviation programs could increase the food demand beyond 70%.

As illustrated by the outcomes of past assistance to Southeast Asia, efforts to help developing countries promote growth among low-income people will expand U.S. export opportunities. For example, South Korea, which received much development assistance in the past, is now a major importer of American agricultural commodities. Rapid economic growth in China, led by agricultural development, also expanded import demands. During the last 4-5 years, American agricultural exports to South Korea and China doubled and tripled, respectively. Future expansions in the demand for American agricultural commodities will primarily come from developing countries. The magnitude of such expansions will depend on successful economic growth in those countries. That is a strong reason for close collaboration between initiatives such as the GAFSP (Global Agricultural and Food Security Program) and "Feed the Future," and efforts to expand agricultural exports and employment in the United States. Agricultural growth in low-income developing countries leads to rapid economic growth outside

agriculture which, in turn, leads to increased import demands for both agricultural and non-agricultural goods and services; truly a win-win outcome.

There is little doubt that the increase in food demand can be met by an equal increase in supply. The earth's productive capacity is far from fully utilized. Plenty of underutilized productive capacity exists in Brazil, Ukraine, Sub-Saharan Africa and elsewhere, including the United States. The gaps between actual and potential yields are large, and continued public and private investment in productivity-increasing research and technology can elevate food production per unit of land and water almost everywhere. Cutting food waste and losses, which are estimated to be about one-third of the food produced, offers another opportunity to meet future food demand. It is less clear whether real food prices will increase or decrease over the longer term. In my opinion, an upward trend in real food prices is less likely than a downward trend.

The key question is whether appropriate investments and policies will be made to exploit the capacity to produce the food needed in a sustainable manner. Investments in agricultural research and technology that reduce unit-costs of production, processing and marketing without doing damage to natural resources are particularly important both in the United States and elsewhere. Such investments need to be made with considerable foresight because of the long time lag between research and the availability of the technology to the farmer. The tremendous future potential of genetically modified (GM) seed is illustrated by the successes to date. Recent estimates found that the use of GM seed reduced the acreage needed to produce the 2009 corn, soybean and cotton crops by about 30 million acres, while reducing insecticide use and increasing farm incomes. It is estimated that the adoption of GM seed increased the incomes of the world's farmers by \$65 billion during the period 1996-2009.

Sustainable intensification, i.e., increasing productivity per unit of land and water while maintaining the productivity of natural resources for future generations, is the key to meeting future food demands. Agro-ecological approaches and ecosystem management combined with productivity-increasing technology deserve more attention. Unfortunately, the very narrow definition of organic production methods that exists in the United States and the European Union makes such methods less attractive as a major player in efforts to assure sufficient food for future generations because of relatively low yields, higher process, risks of soil mining and in some cases higher levels of greenhouse gas emission.

**Second**, large fluctuations in food production and dramatic food price volatility lead to increasing risk and uncertainty for farmers, consumers and traders. It also leads to transitory food insecurity and malnutrition for low-income people in both the United States and developing countries. The food price volatility is a result of production fluctuations, which are caused in large part by changing weather patterns such as irregular rainfalls and extreme weather events leading to droughts, floods, wind damage and resulting crop and animal losses. There is some evidence to support the notion that these changes in weather patterns are linked to long-term climate change. Food price volatility is amplified by irrational or poorly informed investment decisions by speculators, traders and farmers; volatility in oil prices; the close relationship between food and oil prices through biofuel production and agricultural production costs; and by interventions in international food trade. These interventions, such as export restrictions, may be aimed at the protection of government legitimacy among consumers by keeping

domestic food prices low. Large fluctuations in fertilizer and pesticide prices add to the risks and uncertainties facing farmers and future food supplies.

There is no reason to believe that the price volatility in the international food markets will be less severe in the foreseeable future. Therefore, improved risk management instruments are called for. More appropriate food trade rules, that would make abrupt export restrictions and export bans incompatible with WTO membership, are particularly important. Had such rules been enforced for rice in 2007-08, the world would have avoided the extreme price spike in rice prices. Fortunately, two of the large rice exporters, the United States and Thailand, maintained open export markets thus avoiding an even larger price spike. Large increases in export earnings illustrate the saying “doing well by doing good.”

In addition to improved trade rules, investments in productivity-increasing and risk-reducing research and technology, improved rural infrastructure and social safety nets, such as the SNAP and WIC programs in the United States and conditional transfer schemes in developing countries should be considered to help farmers and consumers manage risks and uncertainties. A variety of insurance schemes, both public and private, may be considered. It is important that such schemes do not damage the market signals to farmers to produce more and consumers to consume less when prices are high and the opposite when prices are low. International food aid may play an important role to mitigate the consequences of natural or human-made disasters. However, the timing of food aid is critical to avoid sending the wrong price signals to farmers, e.g., depress domestic prices at a time when farmers should be expanding production. Simple price stabilization schemes and certain trade restrictions may also send the wrong price signals by avoiding price increases to farmers and consumers in situations of scarcity. Countries that use trade policy to stabilize domestic prices are merely passing the needed adjustments on to the rest of the world causing increasing price volatility outside their own borders. Multilateral and bilateral trade agreements may help avoid such behavior.

**Third**, the extent to which changes in international food prices are transmitted to domestic markets varies greatly among countries and over time, making it difficult to estimate the impact on export demands. It is also difficult to estimate how poor people and their nutrition will be affected by international food price volatility. Two groups of countries are likely to have a relatively low food price transmission: the poorest countries, many of which are only weakly integrated with the international food markets, and large middle-income countries such as China and India. The latter may use trade policy, such as export restrictions or import subsidies, to reduce price transmission when international prices are high, e.g., the food price spikes during 2007-08 and 2010-11, thus protecting domestic consumers from large price fluctuations while reducing incentives and incomes for domestic farmers. Therefore, international food price changes may be a poor indicator of country-specific price changes. National and local factors may play a much bigger role than world market prices.

**Fourth**, failure to pursue sustainable management of natural resources and policies to mitigate and adapt to climate change undermines the production foundation for agriculture and makes it increasingly difficult to meet future food needs. Smallholder farm families in developing countries, many of whom are at risk of malnutrition, are particularly vulnerable but unsustainable food production is a world-wide problem. Excessive and inappropriate use of water contributes to draw-down of ground-water levels

and reduced availability of surface water in an increasing number of locations. Appropriate incentives to farmers to treat water as a scarce resource, such as water pricing or rationing, may increase water use efficiency. Soil degradation is widespread. Wind and water erosion and reduced soil fertility are common in many places. Nutrient mining of soils is a particularly important problem in parts of Africa.

A full costing approach, in which the costs associated with unsustainable use of natural resources and negative contributions to climate change are fully added to production costs, is warranted to protect the future productive capacity and reduce the risks of food shortages and income shortfalls among farmers. In some cases, full costing will increase food prices but many opportunities exist for triple wins, i.e., achieving production and sustainability goals while keeping production costs and food prices at a reasonable level. A full costing approach would also reward farmers for action that would benefit the environment.

**Fifth**, according to the FAO, between 800 million and one billion people suffer from insufficient access to the dietary energy needed for a healthy and productive life. Many more suffer from insufficient intake of nutrients. Overweight, obesity and related chronic diseases affect about one in seven of the world's population. Agriculture and other parts of the food system play a key role in assuring good nutrition for all, whether in the United States or developing countries. To fully exploit that role, a closer interaction between improved health and nutrition and other goals associated with agriculture and other parts of the food system should be pursued. Policy and research priorities for the food system should consider opportunities for improved health and nutrition explicitly and go hand-in-hand with investments and policies aimed at the sustainable expansion of global food supplies. Government interventions related to specific commodities, such as price subsidies and research and development support, should pay attention to the nutrition effects. Interventions that lead to a more diversified and nutritious diet could play a major role in reducing overweight, obesity and related chronic diseases as well as micronutrient deficiencies and related illnesses such as iron deficiency anemia and blindness. Policies that would increase the price of sugar and sweeteners and decrease the price of fruit and vegetables are examples of such interventions.

Merely expanding food supplies may be of very limited benefit to malnourished population groups unless their access to food is enhanced. This is true for both low-income countries and the United States. Pursuing the goal of expanded food production while ignoring food security and nutrition goals may in some cases result in more food insecurity, a worsening of the nutritional problems and more overweight, obesity and chronic diseases. Recent and on-going international land acquisition in low-income countries resulting in capital-intensive agricultural production for export to middle-income countries and the removal of smallholder families from the land, they have cultivated but to which they do not have legal title, is an illustration of the trade-off between expanded food production and improved nutrition.

**Sixth**, a strong decreasing trend in real food prices during the period 1974-2000 led to complacency and low priority to investments in agriculture and rural areas in both developing and developed countries. The consequences became obvious in 2007-08 when food prices increased sharply and the talk about the earth's inability to feed itself gained currency. New international attention to the need for increased

investments in agricultural development and improved food security culminated with commitments by G8 and other countries at a meeting in L'Aquila, Italy in the amount of \$20 billion. A relatively small share of the commitment has been released through the Global Agriculture and Food Security Program (GAFSP) and other vehicles. However, the follow-up to the L'Aquila meeting by the countries that made the commitments has been extremely disappointing although initiatives by the Gates Foundation, the U.S. Government (notably the Feed the Future Initiative), World Bank and several other organizations have made significant contributions. Some developing country governments, e.g., China and Ethiopia, have also expanded investments in agriculture, rural development and improved food security. However, many developing countries appear not to have made significant increases in such investments and only a few of the African countries have achieved the agricultural investment goals agreed to within the NEPAD/CAADP framework. There is an urgent need for investment in public goods such as roads, irrigation facilities, local markets and rural institutions to facilitate agricultural and rural development in low-income developing countries. Without such investments, the private sector cannot operate efficiently and will not make the required investments in food supply chains; the risk of food riots and political instability will increase; and opportunities for improved health and nutrition will not materialize. Neither will expansions of export of American agricultural commodities.