A Removable Feast

C. FORD RUNGE AND BENJAMIN SENAUX

C. Ford Runge is Distinguished McKnight University Professor of Applied Economics and
Law at the University of Minnesota. Benjamin Senauer, professor of applied economics at the
University of Minnesota, is currently on leave at the International Food Policy Research
Institute (IFPRI).

In the following essay, Runge and Senauer argue that food security is necessary to grow
emerging democracies with stable middle classes. They assert that securing a World Trade
Organization agreement that allows trade in genetically modified food is essential for the
achievement of food security in developing countries, but that such an agreement must be part
of a larger network of self-interested agreements among nations that increase trade for all,
protect the environment, and ensure food safety.

Food Security and Trade

The debacle of the World Trade Organization’s meeting in Seattle last
year underscored how much can go wrong with world trade—and
how insecure the future of trade liberalization has become. America’s
overreaching unilateralism offended delegations from around the world and
undercut the multilateral premise of the gathering. Seattle’s timing and location
were equally disastrous, in contrast to the carefully planned (and relatively secluded) launch of the Uruguay Round, which began in 1986 in Punta
del Este. And the industrial nations, led by the United States, did not even
address one of the most vital issues: how developing countries can use tech-
ology and freer trade to better feed their populations. This need for “food
security” touches on almost all the hot-button issues surrounding trade—
especially agricultural trade liberalization and genetically modified (GM)
food—yet the American media barely noted it.

What does food security entail? First, it involves improving a developing
country’s access to cheaper food from comparatively advantaged exporting
countries. It is generally more efficient and cheaper than self-sufficiency, in
which a nation tries to produce all crops that its population needs, regardless
of the cost or the country’s natural endowments. Food security also requires
that richer countries lower their tariffs on all goods from developing countries
so that emerging markets can earn cash to import the food they need. Finally,
the drive for food security should tap the potential of GM technology for
developing countries to both enhance nutrition and boost agricultural output.

Rather than ushering in a new era in global economic interdependence,
however, Seattle exacerbated the insecurity and palpable alienation among
developing countries. The influence of environmental and labor groups was
hurt by the presence of their radical fringes, which confirmed the worst fears
of developing countries: that turtle suits and dolphin costumes are really
forms of protectionist cross-dressing. It may have been a “defining moment”
for the diverse array of groups who see the WTO as a symbol of multina-
tional corporate power, but it is difficult to understand what exactly the mo-
ment defined. The summit did nothing but highlight the disarray among
policymakers over trade issues. Back when trade policy was the realm of diplo-
mats and economic experts, at least bids and offers were made. In contrast,
the Seattle battleground resembled a war of many clans—with no winners
and no breakthroughs.

Calling Malthus

Amid this impasse, a troubling problem at the heart of the trade policy debate
is left unanswered. Notwithstanding current surpluses and depressed commodi-
ties prices, the world may become less able to feed itself in the 21st
century. The International Food Policy Research Institute estimates that
about 73 million people will join the world’s population every year between
1995 and 2020, increasing it by 32 percent to 7.5 billion. Almost all the
population growth will occur in developing countries, and much of it will be
urban. Fortunately, per capita incomes will also increase, especially in develop-
ing countries. This will allow households to purchase more meat and animal
products; demand for meat alone in the developing world is projected to
double between 1995 and 2020. But to meet the needs posed by population
and income growth, the world will have to produce 40 percent more grain by
2020. With yield increases slowing from the heady days of the green revolu-
tion in the 1970s, only about one-fifth of this increase is likely to come from
expanding the amount of land under cultivation.
In this context, trade will be increasingly vital to food security. Because cereal production in the developing world will not keep pace with demand, net cereal imports by developing countries will need to almost double between 1995 and 2020 (to nearly 200 million tons) to fill the gap. Net imports of meat will need to increase to 6.6 million tons, or eightfold. Although many antitrade activists in Seattle advocated a return to locally produced goods, including food, the hard truth is that developing countries need freer trade to feed themselves. The United States will continue to be central to this task; in 2020, about 60 percent of world net cereal imports will still come from the United States. This role does not simply reflect American dominance as a comparatively advantaged producer of grains and livestock. Eastern Europe, the former Soviet Union, the European Union, and Australia will also substantially increase their net exports. But if any of them, notably the former Soviet Union, fails to do so, the burden of supplying the rest will fall even more on net exporters like the United States.

Assuming that production and trade keep pace with demand, per capita food availability in most developing countries will rise by about 10 percent from 1995 to 2020. Despite this, 135 million children under the age of 5 are projected to remain hungry in 2020, especially in sub-Saharan Africa and South Asia. In Africa, their number is projected to increase 30 percent by 2020. If production and trade do not keep pace with demand, a Malthusian specter of rapid population growth and dwindling food supplies could emerge. Even under the projections noted above, stagnating yield increases and growing demand will mean that real prices for food could actually rise, rather than fall as they have during the past quarter century. All these trends, which brought a boon to consumers when they lowered food prices, are unlikely to persist in the next century.

The challenge of food security is therefore a race between productivity and populations with rising incomes. Here is where trade can make a difference. It enables food—primarily grain—to move from areas of surplus to areas of deficit, allowing the deficient regions to feed themselves as long as they can pay. Expanded access to rich-country markets also increases the export earnings of developing countries by raising the cash needed to buy food and other goods. Conversely, anything that restricts this movement or reduces the ability to pay for food imports will damage this capacity.

Despite the tremendous significance of food security to trade, Seattle showed that the deep rifts over agricultural subsidies and market access, especially between the United States and the EU, remain largely unresolved. It also underscored the fact that environmentalists, who came to the negotiating table late in the Uruguay Round, now intend to be fully heard in agriculture as well as in other negotiating areas, even if they do not yet speak with a clear voice. Finally, Seattle made it clear that biotechnology—whatever it may augur for world agriculture—will be aggressively opposed as a symbol of globalization.

The protesters in Seattle ignored the fact that trade can help the much larger and more pressing issue of food production and security. The world's ability to feed itself will rely on the international community's willingness to use trade as a way of moving food from surplus to deficit regions. It will also depend on whether countries adopt policies to sustain water, land, and forests and whether farmers turn to GM crops. In short, food security will emerge either as a consensus objective of international economic policy or as another battleground among competing national interests.

**Going It Alone**

A government's perception of national interest too often causes it to hoard food stocks and artificially encourage production, ostensibly to buffer consumers against food shortages and increases in market prices. Even where the international market offers a source of food at cheaper prices, dependence on external sources is anathema to many politicians and their constituents in both the North and the South. Food self-reliance, even with its demonstrably higher costs, is a popular form of nationalism. Even when countries are net exporters of food—as is the United States—it is not unusual to see protectionist regimes erected for commodities in which foreign competition is seen as a threat. Prime examples are the U.S. sugar, wool, and mohair programs, which have been defended on national-security grounds as though they were government stores of strategic metals.

The appeal to self-sufficiency is even greater where historical memories of privation and food shortage exist, as in Europe and Japan. A net food importer after World War II, Europe established a protectionist regime that encouraged domestic food production to reduce dependence on the rest of the world. Unfortunately, this system survived as Europe became a net exporter of wheat in the late 1970s. Surplus food was then subsidized for export to clear European markets. This created a domestic constituency dedicated to perpetuating both domestic and export subsidies, setting the stage for continuing battles with the United States, Canada, Australia, and others. Japan, the
largest net importer of U.S. agricultural products, still clings to a rice policy that grossly subsidizes its domestic production and shuts out cheaper rice from abroad.

Among developing countries, India represents an especially striking case of the pitfalls of self-sufficiency. Efforts to raise food production and reduce reliance on imports have dominated every five-year plan since the country’s independence in 1947. With substantial government subsidies to wheat and rice, largely to the exclusion of other crops, India’s wheat production is now ten times what it was in 1947. Today, it is the world’s second-largest producer of rice, and it ties the United States as the second-largest producer of wheat. It has reduced food imports from a high of 10.5 percent of production in 1965 to almost nothing, and it even became a net exporter of both wheat and rice for a spell in 1995. Yet behind these achievements lurk more disturbing trends. As wheat and rice production and consumption have grown, production and consumption of important protein-rich foods—chickpeas, pigeon peas, mang beans, and lentils—have fallen. In fact, from 1960 to 1995, per capita supplies of protein from all plant products increased only modestly, from 47.3 to 48.7 grams a day; supplies of critical amino-acid proteins actually fell from 9,384 to 8,790 milligrams a day. As a result, more than half of the country’s population is short of energy requirements and three-quarters do not meet minimum protein requirements; 624 million Indians remain malnourished. If India truly wishes to feed its citizens properly, it must accept greater food imports as a more rational and cheaper alternative to domestic wheat and rice subsidies.

India is not alone. Self-sufficiency has reduced many nations’ reliance on international trade as a source of cheaper food, allegedly on the grounds that the international market is insecure. But these schemes of hoarding and protection ultimately destabilize the international market, further reinforcing this sense of insecurity. Granted, freer global trade in food grains is not a sufficient condition for food security, especially when the low purchasing power of poor countries constrains access to these supplies. But it is a necessary step toward securing cheaper and more diverse sources of food.

Sadly, the aversion that many developing countries have to food imports has less to do with such imports’ purported instability than with their governments’ aversion to free markets in general. Even if countries could benefit unilaterally by opening their domestic food markets, most politicians believe that no country should unilaterally “disarm” unless other countries make matching concessions. Hence, those countries at comparative disadvantage continue to insist that their trade barriers can be lowered only when others have made concessions—despite the economic logic of comparative advantage. Each nation waits for others to make the first move toward liberalized trade before moving itself.

Making the Rounds

Given the resistance to abandoning food self-sufficiency, countries need a mechanism for entertaining bids and offers in order to reach mutual concessions and break out of the food-security dilemma. This has been the role played by trade agreements, beginning in 1947 with the General Agreement on Tariffs and Trade (GATT), where bids and offers within and across sectors were swapped to achieve an ultimate package. Rather than realizing the neoclassical free-trade dream, GATT was about mutually managed mercantilism based on compromises. The same now applies to its successor, the World Trade Organization (WTO).

Unfortunately, agriculture has always been one of the biggest sticking points. For the first seven rounds of GATT negotiations, until the Uruguay Round of 1986–93, agriculture remained largely off the table at the behest of the Americans and the Europeans, who argued that the topic was too sensitive to be subjected to the disciplines applied to manufacturing. The agricultural export-subsidy wars of the 1980s, which were brought on by European commodity surpluses, ended this mutual silence and created the conditions needed to tackle agricultural subsidies. Throughout the Uruguay Round, European agricultural interests supported the American NGOs [non-governmental organizations] that would do their bidding, arguing that freer trade harmed U.S. farmers as well as European ones. Yet this view was largely rejected by most (although not all) U.S. farming interests, which supported expanded U.S. agricultural exports. In the end, major liberalization still eluded negotiators, despite some modest arrangements on export subsidies, market access, and sanitary and phytosanitary measures.

At the same time, environmental issues that touched agricultural trade liberalization began to emerge. This linkage arose partly from a burgeoning perception that growth through trade would undermine environmental quality, leading to a worldwide “race to the bottom.” Although this pessimistic argument was not supported by empirical evidence, it retained a large following among environmental protectionists. In contrast, more optimistic groups saw a chance to protect environmental resources by using liberalization to
enforce environmental oversight. But neither side dealt explicitly with how trade affected agriculture or food security—until the emergence of the GM debate.

GM food has now become a cause célèbre for consumer groups that had been relatively uninvolved in trade policy, lending strength to a coalition of antitrade activists that includes labor, environmentalists, and left- and right-wing groups anxious to protect national sovereignty. This new combination of forces has successfully used the “Frankenfood” issue to mask its protectionist elements while posing as the enemy of corporate multinationals.

The initial opposition to GM food grew in Europe. It aimed first at American multinationals like Monsanto, one of the leading sellers of genetically modified corn, soybeans, and cottonseeds. When Monsanto indicated the possibility of a “terminator” gene that would render the offspring of GM plants sterile (thereby preventing farmers from producing seeds for replanting), a coalition of developing countries and European farmers formed to develop new trade barriers against the spread of these crops. Environmental pessimists now claim that GM technology could spread unwanted resistance to weeds and insects beyond the target species, potentially creating “superweeds” and other unwanted ecological side effects. For their part, consumer groups argue in fairly vague terms that GM food poses a threat to basic health and food-safety regulations. These activists also see GM issues as useful in getting traction from other groups to oppose trade liberalization, whether or not these allies are concerned with food.

The new opposition threatens much more than the bottom line of companies such as Monsanto. It creates new problems for exporters of GM crops in the United States and elsewhere who had adopted the technology with enthusiasm, and for researchers who bet millions of dollars on the potential to help address disease and production issues for developing-world farmers. Most alarming is that these groups fail to understand what this discovery could do for developing countries. For example, new technology that raises beta carotene levels in rice—the world’s most widely consumed grain—could effectively wipe out Vitamin A deficiencies within a decade. This would affect the lives, and prevent the deaths, of millions of poor children in developing countries—if the technology can be successfully transferred to traditional rice growers.

Despite the questions surrounding it, the rapid adoption of GM technology since 1996 suggests that it greatly appeals to farmers, at least in developed countries. Since then, the United States has seen the rapid commercial intro-
duction of GM corn, cotton, tomatoes, and soybeans. By 1998, more than 500 genetically modified plant varieties were available in the United States, accounting for 28 percent of the land (2.57 million hectares) devoted to maize, soybeans, and cotton. Other countries, led by Argentina and Canada, also began planting hundreds of thousands of hectares with GM crops. These crops rapidly entered the supply chain for processed foods using corn, soybean, or cottonseed oils. Today, some 70–100 percent of processed foods everywhere may contain some GM material.

In the developing world, the appeal of GM food remains uncertain despite the long-standing efforts of major funders, such as the Rockefeller Foundation, to harness the technology to aid poor farmers. Unfortunately, most developing countries possess few technical resources to develop their own scientific and management capacity for biotechnology. Doing so would need substantial flows of capital, human resources, and scientific information and expertise across national borders. Multinational companies heavily invested in GM technology could help by establishing training fellowships for scientists, bolstered by international agreements to protect the intellectual property rights of both companies and developing countries. Yet even if the South clears the technological hurdles to developing GM food, it may face continuing NGO opposition in the North.

The GM issue connects agriculture, trade, the environment, and food security to form a complex relationship that cries out for a global structure of rules and disciplines. This is precisely what the much-maligned WTO system can provide. At the same time, these “Frankenfoods” have become central to the new protectionist case against the world trading system. The only way out of this quagmire is for the WTO to incorporate the successful concession-based approach of the past and tie food security and GM issues into a broader framework of regulations for trade, intellectual property, and the environment. The global problem posed by food security is inextricably linked to the development of the rules and agreements that operate at a level higher than the nation-state. Food security is a problem of collective national action that can be pursued only through multilateral policies, just like international commerce or environmental issues.

**Give a Little**

To provide all these global collective goods, nation-states must be willing to grant concessions through negotiated agreements. In turn, these concessions
should be seen as reciprocal contributions to a balanced package. For this tactic to work, countries must develop new forums or build up existing institutions to maintain the necessary multinational infrastructure.

The first and most obvious step is to secure the commercial concessions under the terms of the WTO’s next round of multilateral negotiations. In particular, progress must be made in agriculture toward increased market access and reduced export subsidies. Like the Uruguay Round, the next set of trade negotiations will face major resistance from farming interests, especially in the EU. Nevertheless, increasing food security will require agricultural trade liberalization—and over time an end to the price instability generated by tariff distortions.

Although recent measures such as Congress’ Africa trade bill promise additional assistance to the poorest countries, the effectiveness of development aid is dwarfed by the potential for significant increases in access by all developing countries to rich countries’ markets. This will require the dismantling of protectionist regimes in the United States and the EU for sugar, peanuts, textiles, and other commodities in which many developing countries hold comparative advantages. If these countries are allowed to expand their exports—rather than receive handouts—they will find a new engine of growth. A 10 percent increase in market access to U.S. sugar markets for Caribbean producers would do more to raise incomes in the Caribbean basin than has all of the development assistance provided in the last 25 years.

Second, NGOs are correct in pointing out that new multilateral institutions must learn to deal with environmental challenges. They are wrong, however, in believing that the WTO should bear the blame. It is unreasonable and unwise to expect the WTO to assume responsibility for environmental issues unless they impinge directly on trade. Even then, it is doubtful that the WTO can tackle the manifold complexity of international environmental issues. For these reasons, many environmentalists have now joined the former director general of the WTO in calling for a separate entity to address the need for rules on ecological interdependence, just like the WTO addresses the need for rules on commercial interdependence. A new “Global Environmental Organization,” for example, would create a central authority to organize the hundreds of existing environmental agreements and protocols.

Among other things, such an organization could assess the environmental implications of the expanding market for GM foods. Governments and the private sector will likely need to respond to calls for the labeling of foods and seeds. A system is therefore needed that could effectively use and develop GM technologies while allowing consumers to reject them if they wish. A Canadian survey of 8 countries found significant variation in consumer attitudes. For example, although 68 percent of all respondents said they would be less likely to buy groceries labeled as GM products, national responses ranged from a low of 57 percent in the United States to 82 percent in Germany. But the combination of consumer choice with freer trade would remove the chance that the GM issue could be exploited for protectionist purposes; consumers could choose between GM food and organic products without resorting to trade discrimination. As Alexander Haslberger, a leading European expert on biotechnology, noted in a recent contribution to Science, the significant public opposition to GM food will require that the industry adopt honest and appropriate labeling if it wants to avoid consumer resistance. One possible multilateral response could be under the auspices of the new biosafety protocol—or the U.N. Food and Agriculture Organization’s Codex Alimentarius—to harmonize differing national standards.

The Montreal talks last January, when more than 130 countries agreed on the Biosafety Protocol to the Convention on Biological Diversity, were a good start. The protocol discuses the environmental risks and benefits in biotechnology and creates a framework to protect biodiversity in developing countries. But many unanswered questions remain. Most prominent is whether the new protocol will allow a protectionist loophole for a “precautionary principle” that bars GM-food trade even if scientific evidence of harm is insufficient. Another central issue is the balance between trade restrictions justified on environmental or health grounds and the larger obligations of nations to trade without discrimination under the WTO.

Last, the issue of food security itself cannot be used as an excuse to restrict market access. Nor can it be used to subsidize production in ways costly to the countries that need trade liberalization the most. But to reassure the countries and their citizens who are fearful of market forces, rules must be in place to provide guaranteed access to food in times of emergency. This can be accomplished by multilateral grain-sharing agreements that guarantee emergency concessionary terms. Here, as elsewhere, governments and the private sector must make a collective commitment to allay the fears of developing countries and address the calls of those most mistrustful of market forces and the dark side of globalization.

Since developing countries now account for three-fourths of the WTO member nations, new trade agreements will not be reached without their sup-
port. The developing world has the power to block future WTO accords that they perceive as hostile to their interests. Given that food security is a major concern in many of these countries, a trade commitment to enhance this basic need could generate the goodwill necessary among developing countries to facilitate their cooperation across a range of global issues. A precondition for successful international cooperation is that all participants perceive a net benefit. True, not all countries gain equally from every international accord; in some instances, they may lose on specific issues. But commitments to food security could provide enough gains seen as necessary by developing countries to win their cooperation on a range of other issues important to the industrial nations, such as the environment and intellectual property rights.

Henry Kissinger remarked after Seattle that President Clinton “could have used the occasion to put forward a farsighted program for dealing with what portends to be one of the greatest challenges of the new century: the huge gap between the sophistication of . . . globalization, and traditional political thinking still based on the nation state.” Bridging this gap has thus far escaped the presidential candidates, whose international views are simply extensions of domestic interest-group politics. A larger and more comprehensive multilateral vision, which recognizes a legitimate and growing role for developing countries—and food security in particular—would ultimately benefit the United States. Realizing this vision will require more and better international institutions, not fewer and worse ones.