Conflicts of U.S. Farm Policy With Food Safety, Nutrition, and Health[i]

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Farm policy is food security policy. This is not a "post-9/11" reinterpretation of national security. Food security has always been the only legitimate reason for government to be involved in agriculture. If people could otherwise be assured of adequate supplies of safe and wholesome food at reasonable costs for all people and for all times, there would be no need for government farm programs. Public policies affecting agriculture have persisted in virtually every nation of the world because governments have not been willing to leave the food security of their constituents to the impersonal forces of the marketplace. No responsible government ever will.

Markets do not adequately value the ecological and social resources necessary to ensure long run food security. Economic costs and benefits accrue to individuals, not to societies, and thus accrue only during the lifetime of individuals, not over generations. It makes no economic sense to incur the cost of maintaining the civility of society by ensuring that no one goes to bed hungry, regardless of their ability to buy food. It makes no economic sense to incur the cost of protecting the productivity of the land to produced food for some future generation. And it makes no economic sense to incur the economic costs necessary to protect public health, if the health risk cannot be traced to a specific individual source that can be penalized for its irresponsibility. The food security of a nation cannot be left to the marketplace; it must be ensured through the collective actions of the people, through government.[1]

Government farm programs were first justified as means of keeping farmland in the trusted care of family farmers who are committed to passing their land to the next generation as fertile and productive as when it was passed to them. At the time, during the 1930s, most Americans were either farmers who produced much of their own food or people living in rural communities. As the population shifted from rural to urban, commodity-based price and farm income support programs were then justified as a means of stabilizing prices at levels that would ensure a dependable and affordable supply of food for consumers, although the rhetorical commitment to family farms was largely unchanged. Soil and water conservation programs also were justified as means of protecting the agricultural resources, the land, which was necessary to ensure long run productivity. Even the research and education programs of state and federally funded agricultural colleges were justified as means of increasing agricultural efficiency and thus making food less costly and more available to more Americans.

More recently, the emphasis of USDA agricultural policy has shifted from domestic food production to reliance on the global food economy. The current policy emphasis is on enhancing agricultural exports, but the underlying assumption is that international trade will make food

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[i] Prepared for presentation in the weekly seminar series at The Rudd Center for Food Policy and Obesity, Yale University, New Haven, CT, February 27, 2007.

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more abundant and affordable for American consumers. Long run food security under such a policy depends on a faith in global free markets to provide national food security. Regardless of the ultimate effects, or even the initial intentions, farm policies invariably are justified to the public as being necessary to ensure national food security.

Food security obviously includes food *quality* as well as *quantity* and affordability. Unfortunately, the emphasis of nearly all programs administered through the United States Department of Agriculture (USDA) has been on food quantity rather than food quality. If food isn't safe, nutritious, and healthful, as well as available and affordable, it will not ensure adequate diets for all. The USDA defines food security as "access by all people at all times to enough food for an active, healthy life." [2] The agency admits this concept of food security is but one requirement for a healthy, well-nourished population but places most of the burden for food quality and healthy diets on consumers.

The USDA is responsible for the safety of meat and poultry products, but their responsibilities for public health and nutrition are limited primarily to nutrition education programs, most of which are linked to food assistances programs.[3] In addition to its farm programs, the USDA administers 15 different food assistance programs, which account for more than half of the agency's total budget. These food assistance programs, the largest of which are food stamps, school meals, and direct distribution to low income families, focus on food accessibility and quantity rather than food quality or nutrition.

Overall responsibilities for national food safety are split among several different government agencies. The Food and Drug Administration is responsible for the safety of all domestic and imported food, except meat and poultry; the Environmental Protection Agency is responsible for regulation of drinking water, pesticides, and toxic substances in waste; and the Center for Disease Control and Prevention is responsible for control of infectious and chronic diseases.[4] This splintered responsibility has led to conflicts between the food quantity and food quality dimensions of national food security.

Over the past couple of decades, the general bias in all government programs has been to rely more on market-driven solutions to public problems, including national food security. Even the new Department of Homeland Security relies heavily on private contractors to pursue its mission. This bias toward privatization includes programs that are supposed to protect public health and the natural environment. Whenever government involvement is deemed absolutely necessary, the tendency has been to rely on public-private partnerships. A consequence of this bias has been to give priority to policies that provide subsidies to the private sector as incentives for the desired behavior rather than rely on government regulations to restrain private behavior. Nowhere is this bias more readily apparent than in the priority given to government programs that subsidize agricultural productivity over programs that regulate the food industry to ensure food safety, health, and nutrition. In spite of claims to the contrary, there is growing evidence that the safety, nutrition, and healthfulness of the nation's food supply have been sacrificed to a blind faith in the agricultural economy.

In his book, *Canaries on the Rim*, Chip Ward, an environmental health advocate wrote, "The most direct link you have with your environment is your own body and its health. Your body is

composed of more than a trillion cells that are constantly renewed. Every year of your life, you have a new liver, new marrow, new stomach lining… New cells have to come from somewhere and they come from the foods we eat, the fluids we drink, and the air we breathe. Our environment becomes us, as the soil, plant, animal, water, and air are processed into our flesh and blood."[5] We don't need reams of medical research to validate his claim. We become what we eat; it's a matter of common sense.

For decades, we have been filling our environment with agricultural chemicals, in our pursuit of abundant quantities of affordable food. Thus, we shouldn't be surprised to find traces of these chemicals in streams and ground water nearly everywhere in the U.S. A 1999 U.S. Geological Survey (USGS) reported, "at least one pesticide was found in almost every water and fish sample collected from streams and in about one-half of all wells sampled."[6] The highest concentrations of the most heavily used agricultural compounds were detected in seasonal patterns corresponding to typical land application of pesticides. But pesticides seldom were found alone, with nearly all of the stream samples and half of well samples contained two or more pesticides. The USGS report concluded that while "average" stream concentrations in agricultural were generally below current human health standards, current health standards are available for only a limited number of individual pesticides, do not account for mixtures of pesticides or breakdown products, and apply only to limited range of potential health effects.

Traces of these same agricultural pesticides also routinely show up in tests of foods in supermarkets. Rising concern for pesticide contamination was a primary driver of the early natural food movement. The natural foods movement laid the foundation for the booming market for organic foods during the 1990s, which has been driven by broader public concerns of food safety, nutrition, and health. During the decade of the '90s, organic foods grew an average rate of 20% per year, doubling every three to four years. Concerns about genetically modified organisms in foods, growth hormones, antibiotics, mad cow disease, and e-coli – all food safety issues – have accelerated the market shift to organic foods. By 2005, even Wal Mart announced intentions to make organics a significant part of their food marketing strategy. Clearly, there is a growing concern among Americans about the safety and wholesomeness of conventionally produced foods.

Food safety is certainly not the only concern. A growing number of scientific studies also are verifying that significant declines in the nutritional value of foods have occurred while the USDA has been subsidizing and promoting agricultural productivity. The American epidemics of obesity, diabetes, and heart disease are all obviously related to the American diet. It might be easy to blame these maladies entirely on the sedentary but high-stress American lifestyle, which probably is a significant casual factor. But an equally if not more important cause might be that many of today's foods are lacking in essential nutrients.

Problems of obesity and diabetes are more common among people with lower incomes who logically would tend to seek foods providing the cheapest source of energy – meaning the most calories for the fewest dollars. Many lower income people, because of time constraints, tend to rely on highly processed and ready-to-eat foods, including "fast foods." People on such diets could easily end up eating far more calories than they need without getting enough of other nutrients to meet the minimum requirements of a healthy diet.

When livestock are offered a wide variety of foodstuffs containing different amounts of vitamins, minerals, and other nutrients, they will naturally select a healthy balanced diet. When they are offered a premixed feed containing specific quantities of the same nutrients, they tend to consumer more of some nutrients than they need in their efforts to meet their minimum requirements of others. If we humans have this same basic tendency, whenever our food choices are limited, we are likely to consume more of some nutrients than we need because we are not getting enough of others. In other words, a lack of balanced nutrition in our diets would leave our bodies hungry for some essential nutrients we need for good health even though we are consuming far more calories than in consistent with good health. Many Americans may be obese, sedentary, and stressed out because they are starving for essential nutrients in their foods. These essential nutrients may be lacking in the foods most people are eating today, even though they can be found in abundance in foods grown naturally and organically on healthy, productive soils.

One prominent academic study compared nutrient levels in 43 garden crops in 1999 with levels documented in benchmark nutrient studies conducted by USDA in 1950. The scientists found declines in median concentrations of six important nutrients: protein –6%, calcium –16%, phosphorus –9%, iron –15%, riboflavin –38%, and vitamin C –2.[7] Another study published in the Journal of Applied Nutrition in 1993 showed nutritional deficiencies for conventional foods relative to organic foods.[8] Organically grown apples, potatoes, pears, wheat, and sweet corn, purchased over a two-year period, averaged 63% higher in calcium, 73% higher in iron, 118% higher in magnesium, 91% higher in phosphorus, 125% higher in potassium, and 60% higher in zinc than conventional foods purchased at the same times. Other studies have shown that yield-enhancing technologies – fertilizers, pesticides, plant density, and irrigation – reduce the nutrient content of field crops by amounts generally consistent with the results for the 50-year nutrient declines and differences between conventional and organic crops.[9] These are but a few of many studies showing a lack of nutrient density in today's industrial foods.[10]

These results should come as no surprise to anyone who understands the basic nature of food production. The profitability of producing agricultural commodities results primarily from yields or quantities, costs of production, and prices received. Some quality factors may be taken into consideration in pricing, but prices are far more likely to relate to cosmetic appearance or taste, rather than any measure of nutrition. The underlying assumption is that nutrient values of all commodities – regardless of breeds, varieties, or growing methods – are still essentially the same as in earlier benchmark studies of USDA.

The tissues of living organisms with larger cells, which contain more water, obviously have less *substance* – meaning plant materials other than water – than do the tissues of organisms with smaller cells, which contain less water. It seems only logical that it would cost less per pound to produce an organism with fewer and larger cells, which are mostly filled with water. Organisms with smaller cells are more nutrient dense because they contain more cell walls, which are formed from nutrients taken either from the soil or the air. In addition, conventional crop production relies heavily on three basic elements, nitrogen, phosphorus, and potash, which are contained in commercial fertilizers. While these elements are obviously adequate to support high crop yields, they may not be adequate to produce crops containing the wide diversity and balance of nutrients found in crops produced on healthy, naturally productive, organic soils. Studies

showing negative correlations between yield-enhancing technologies and crop nutrient density seem to validate this logical conclusion

Even after adjusting for differences moisture content, it appears to be cheaper and more profitable to produce foods that are “less dense” in nutrients. Regardless, this line of inquiry would appear to be a potentially fertile ground for continuing research into questions of food quality and nutrition. But we don't need a mountain of evidence to conclude that food quality has been compromised in the pursuit of greater agricultural productivity.

In the case of obesity and diabetes, however, the food processing and distribution industry share much of the blame. The people who market foods are concerned about profits – not diet or health. The managers of the multinational corporations that currently control the American food system have a legal fiduciary responsibility to maximize returns to their stockholders. They have no social or ethical commitment to protecting public health – doing only those things they are required to do by law.[11] And current laws are clearly inadequate to protect the public from diet related illnesses.

Food industry marketers know that humans have a natural taste preference, probably a genetic predisposition, for foods that are high in fat and sugar. Preferences essential for survival and health of our primitive ancestors may threaten our health today. Regardless, it's easier to market foods that are higher in calories, particularly when those foods are cheaper to produce. The primary sources of those cheap foods are plants and animals from farms using modern yield-enhancing technologies, thus lacking in nutrient density and encouraging over consumption, but nonetheless enhancing profits for the food industry. The logical health consequences are obesity, diabetes, heart disease, and other diet related illnesses.

The natural link between agricultural policy, overproduction of nutrient deficient food, and unhealthy diets is skillfully documented in Michael Pollan's best selling book, *The Omnivore's Dilemma*.[12] He logically links large government subsidies for corn production with surplus production and depressed corn prices, which stimulated manufacturing of the cheap corn sweeteners that now fill the American diet with empty calories in foods ranging from soft drinks, to breakfast cereals, to french fries. Subsidized corn also stimulated large-scale confinement feeding of livestock, with the associated pollution of air and water, excessively fat meat, and even increased risks of e-coli contamination of meats in processing plants and of crops grown with irrigation water polluted by animal waste. The government programs that stimulated overproduction of corn have also stimulated excessive applications of fertilizers and pesticides which also threaten the safety of our food supply. A similar story could be told for virtually every food crop that has been subsidized through our government farm policies. In attempting to improve food security by making food more abundant and affordable, we have threatened food security by making it less safe and nutritious.

The current reliance on global markets to provide food security will only make matters worse. With a single global free market, an increasing share of the American diet will originate in countries with far fewer environmental and health regulations than we have in the U.S. The multinational corporations that dominate the global food system will produce our food wherever in the world they can produce at the lowest dollar and cent cost, which increasingly is not in the

U.S. Our current environmental and health regulations add to dollar and cent costs of food production, as do the higher costs of agricultural land and labor in the U.S. The recent increased use of corn for ethanol, and the resulting higher corn prices, will provide additional market incentives to move food grain production and animal feeding to other countries. Thus, producing corn for ethanol will leave the U.S. with even more polluted water and even less control over the quality and safety of our food supply. Government policies that promote food security through international trade may move some of the pollution and exploitation of industrial food production to other countries, but the food in American supermarkets will be even less safe, less nutritious, and less healthful.

Ultimately, the food security of any nation depends upon the productivity of its agricultural land and upon the commitment of its farmers to produce safe and healthful food, not just for this generation but for generations of Americans to come. Food security can only be found systems of food production that are ecologically sound, socially responsible, and economically viable – in a sustainable agriculture. Farmers must be willing and able to pass their land to the next generations as healthy and productive as when it was passed to them. As Wendell Berry, Kentucky farmer and writer put it, "If the land is to be used well, the people who use it must know it well, must be highly motivated to use it well, must know how to use it well, must have time to use it well, and must be able to afford to use it well."[13] He goes on to write, "farmers must tend farms they know and love, farms small enough to know and love, using tools and methods that they know and love, in the company of neighbors that they know and love." Consequently, if our farm policy is to ensure long run food security, it must ensure that America's farmers are both willing and able to use the land well and are committed to using it well, not only for their own benefit but also for the benefit of those they love – their families, neighbors, and fellow compatriots.

Large corporate contract producers have no commitment to any particular piece of land; most don't even own most of the land they farm. They can't really *know* the land because they are trying to farm too much of it to *know* any of it very well. Many don't know how to take care of the land; they depend on a prescribed regimen of commercial inputs for their productivity, not on a healthy, naturally productive soil. Large corporate producers have no commitment to providing high quality food for people or being good neighbors or citizens; their priorities are profits and growth. They can't afford to love their neighbor, because sooner or later they will need their neighbors land to grow. They can't afford to love their customers because consumers are their source of their profits. They can't afford to love either land or people because they must stay focused on the economic "bottom line" to stay competitive in the global economy. The early farm policy was on target; American food security depends on having more, smaller, independent family farmers. A farmer can *know* so much land and so many people, and thus, only truly *love* so much land and so many people. America's food security will always depend upon smaller, family farms.

The kind of agriculture needed to provide American food security is already emerging under the conceptual umbrella of sustainable agriculture. Groups of creative, innovative, entrepreneurial farmers are developing a new kind of American farm.[14] These new farmers are given a variety of different labels, including organic, natural, biodynamic, ecological, holistic management, permaculture but they are all pursuing the same basic purpose by the same

ecological, social, and economic principles. Invariably, these new sustainable farms are smaller, independently owned and operated, family farms. By redirecting farm policy toward ensuring the economic viability of these new American farmers, we can go a long way toward ensuring our long run food security.

Ironically, much of the current public support for government programs for agriculture stems from the belief that today's programs are already targeted to helping smaller, independent family farmers. There is almost nothing in current farm policy to validate this belief. Government payments may have helped family farmers put in another crop during times of economic stress, but they have done nothing to secure their economic future. It's absurd to argue that current farm policies support either family farms or food security, while those policies subsidize the large-scale, specialized, standardized, industrial agricultural production systems that are forcing farmers to become corporate contract producers and are placing our food security at risk. Fortunately, more people are becoming aware that current farm programs are not working for the good of farmers, consumers, or the public in general, but instead are subsidizing agribusiness. This growing public awareness creates an opportunity for change.

The cornerstone of a new American farm policy should be long-run food security through agricultural sustainability. A sustainable agriculture must be ecologically sound, economically viable, and socially responsible, if it is to be capable of maintaining its productivity over time, and thus to provide long run food security. Government farm programs to ensure agricultural sustainability would be fundamentally different from past and present government programs.

First, with respect to ecological integrity, government farm programs eventually must recognize that no one has the *right* to degrade the productivity and health of the natural environment. Thus, all farmers and ranchers should be required to meet environmental standards that conserve the soil, protect the quality of water and air, and in general, ensure the integrity of the natural resource base. The rights of private property have never included a right to destroy the productivity of the land or to degrade the natural environment.

A socially responsible agriculture must meet the needs of society – as consumers, producers, and as citizens. It must provide an adequate supply of safe, healthful, and nutritious food accessible and affordable to all. If universal accessibility and affordability cannot be assured through the marketplace, then it must be provided through government food assistance programs. A socially responsible agriculture also must provide farmers and food systems workers with opportunities to lead productive and successful lives. This doesn't mean that everyone who chooses to farm has a right to do so, regardless of their aptitudes or abilities. However, those who are willing and able to farm sustainably, to ensure national food security, should be given an opportunity to do so. To support such opportunities, government benefits should be limited to individually owned and family operated farms. And, the benefits should be paid only to *real* people, not to corporations.

The primary responsibility of government to farmers should be to ensure that ecologically sound and socially responsible farming operations are economically viable, if not through the marketplace, then through government farm programs. The same dollars used to support current farm programs would be more than adequate to fund effective long run food security programs.

And in contrast to existing farm programs, a sustainability-based farm program could be designed to be self-liquidating over time. In addition, the administration of such a program could be far less complex for farmer and rancher participants than are current agricultural programs.

Such a program might provide a *tax credit* to go to each family farm that *demonstrates progress toward farming sustainably*. With a $20,000 tax credit, for example, a farmer with no net farm income would receive a $20,000 annual payment from the government to compensate them for conserving natural resources, protecting the natural environment, and contributing to the food security of their community and nation. Farmers who were eligible for the tax *credit* would also be subject to an alternative farm tax *rate* higher than current tax rates – possibly, 50 percent of total net farm income. Thus, as net farm income increases, the advantage of the tax *credit* would diminish. At a net farm income of $40,000, for example, the taxes owed (50 percent of $40,000) would completely offset the $20,000 tax credit, leaving the farmer neither owing money nor receiving money from the government. At some higher level of income, probably between $60,000 and $80,000, it would be advantageous for the farmer to forego the special *farm tax credit* and pay the taxes as any other business. At this point, however, the sustainable farming or ranching operation would be sufficiently profitable to ensure its sustainability without any further government support.

The tax credit would be limited to $20,000 for each full-time, independent farmer, making it unattractive to large-scale, industrial agricultural producers. Farmers who chose not to participate in the food security program would still not be allowed to exploit their land or to degrade the natural environment. Such farms would be classified as industry, rather than agriculture, and would be subject to the same environmental regulations as any other producer of industrial commodities. Over time, farmers would be required to show progress toward sustainability to remain eligible for the tax credit. If, after some specified number of years, they fail to achieve *economic sustainability*, they could be helped to find employment elsewhere, freeing up their farms for a beginning farmer, who would then be eligible for the Farm Tax Program.

With respect to U.S. agricultural trade policies, the guiding principles for a sustainable global society should be simple and straightforward. A truly effective World Trade Organization would empower every nation with both the *right* and the *responsibility* of protecting its natural resources and its people from economic exploitation. People within nations should be allowed to decide the conditions under which they choose to trade and choose not to trade, without threats or coercion. For trade to be mutually beneficial it must not be exploitative or extractive. Our national ecosystems, cultures, and economies are becoming increasingly global. But removal of national economic boundaries, by creating a single global market, would inevitably lead to economic exploitation of the weak and the poor by the strong and the wealthy and to economic exploitation of the natural environment. The national food security of any nation depends upon it being able to protect its productive natural and human resources from economic exploitation.

Such government programs, if successfully implemented, would go a long way toward ensuring food safety, wholesomeness, and nutrition, as well as food quantity and affordability. The resulting transition to sustainable farming would reduce, if not eliminate, use of agricultural chemicals that pollute ground and surface water and contaminate our foods. Large-scale confinement feeding of animals would become unprofitable once such operations were required

to manage their wastes by ecologically sound and socially responsible means. Their irresponsible use of hormones and antibiotics and inhumane treatment of animals would be abandoned because they would no longer be profitable in sustainable production systems.

Sustainable farmers depend on crop rotations and integrated crop and livestock systems to control pests and rebuild the soil fertility. Such farms can be just as productive as those relying on the yield-enhancing methods of industrial agriculture, assuring quantity, accessibility, and affordability.[15] With healthy productive soils, the nutrient density of our foods would again equal or even exceed levels of earlier times. With animals feeding on plants from healthy soils, our meat and dairy products would also be more healthful and nutritious. Farmers who pursue sustainability have incentives to focus on food quality as well as quantity. When farms work in harmony with nature, *healthy* soils, plants, and animals are *productive* soils, plants, and animals. Early advocates of sustainable farming understood that human health is directly connected to the soil health. Soil scientist, William Albrecht, wrote in 1952, "Human nutrition as a struggle for complete proteins goes back… to fertile soils alone, on which plants can create proteins in all completeness." [16] He later wrote, "We are slow to study the importance of soil fertility to the quality of food, for this is not yet to our economic advantage in the marketplace."[17]

Sustainable farm policy alone will not be adequate to ensure food security, as many of the current threats to food safety and quality in food are in processing and distribution. Means of addressing those threats are beyond the scope of this paper. However, one logical means of addressing overall food security would be to bring all government programs affecting both food quantity and quality – in production, processing, and distribution – under the administrative umbrella of one agency, possibly the Department of Health and Human Services. Regardless of the means, the Department of Agriculture should not be allowed to continue compromising national food security by promoting the economic interests of industrial agriculture.

In summary, there would be no need for government programs to ensure national food security if we could otherwise be assured of adequate supplies of safe, wholesome, and nutritious foods at reasonable costs for all people and for all times. The markets will not ensure food security. Thus, government food policies are necessary to promote food security – food quality as well as quantity and accessibility. U.S. farm policies that promote food availability and affordability are currently compromising food safety, nutrition, and health. A new paradigm of sustainable agriculture holds promise as a means of ensuring the availability and affordability of food while producing foods that are safe, nutritious, and healthful. Regardless, the current conflicts between farm policy and food quality must be removed, if government programs are to promote long run national food security.

End Notes

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