The Globalization of Agriculture: Implication for Sustainability of Small Horticultural Farms

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To globalize means to make worldwide in scope or application. We live in a global ecosystem; in this, we have no choice. Increasingly, all nations of the world share a global culture, a consequence of past choices. And, the economy has become increasingly global as well. However, within the global ecosystem are boundaries, which give form and structure to natural systems. Within the global culture are boundaries, which define different human values and perspectives of reality. And within the global economy are boundaries, which allow nations to reflect the differences in their natural ecosystems and social cultures in the structure and functioning of their economies.

The World Trade Organization (WTO) appears committed to removing all "barriers" to international trade, to achieve "free trade," and thus, to removing all "economic boundaries" among nations. Once the economic boundaries are removed, cultural boundaries will become further blurred, and ecological boundaries will be left open to economic exploitation. Cultural and ecological diversity are considered obstacles to economic progress. A truly global economy will allow greater geographic specialization, greater standardization of processes and products, and thus, will allow global corporations to achieve even greater economies of scale.

In a global agricultural economy, small farms will be replaced by large farms, which in turn will be controlled by giant multinational corporations. Small farmers quite simply will not be able to compete in a "free market" global economy. Many small farmers of the world rely on horticultural crops for their viability. Thus, the implications of globalization may be even more dramatic for horticulture than for most other agricultural sectors. But even more important, ecological and cultural boundaries are essential to the long run sustainability of agriculture. Thus, if all economic boundaries are removed, human life on earth, at least as we know it, will not be sustainable.

Over the past decade, globalization has become a major public issue. Most of the recent controversy has centered on the World Trade Organization (WTO). The WTO was established in 1994, with authority to oversee international trade, administer free trade agreements, and settle trade disputes among member nations, replacing the General Agreement on Tariff and Trade (GATT). However under the WTO, authority was greatly expanded to cover trade in services as well as merchandise – including protection of intellectual property rights. And, intellectual property rights have been interpreted to include the genetic code of living organisms. Also, the WTO has far greater authority over trade in agricultural commodities than had existed under the GATT. The implicit, if not explicit, objective in forming the WTO was to reduce and eventually remove all restraints to trade, in order to achieve a single "global free market."

“Globalization,” as a concept, is far broader in meaning than is the concept of a “global free market.” To “globalize,” according to Webster's dictionary, means “to make worldwide in scope or application.” The objective of the WTO is to create a single geographic market that is worldwide in scope, with a single set of trading rules that are worldwide in application. However, we cannot change the global economy without simultaneously affecting global ecology and global society. This is the crux of the current WTO controversy. What are the implications of a “global free market,” not just for the world economy, but also for the world community and for the world itself?

We live in a global ecosystem, regardless of whether we like it or not. We have no choice; such is the nature of “nature.” The atmosphere is global. Whatever we put in the air in one place eventually may find its way to any other place on the globe. Weather is global. The warming or cooling of the oceans in one part of the world affects the weather in another, which in turn affects the temperature of oceans elsewhere on the globe. All the elements of the biosphere are interrelated and interconnected, including its human elements. We are all members of the global community of nature. We have no choice in this matter.

Increasingly, we also live in a global “social” community. Global communications – print media, radio, television, and the Internet – have erased technical communications barriers among nations, resulting in the spread of common cultural values around the globe. Global travel has become faster, easier, and less expensive, resulting in greater person-to-person sharing of social and cultural values among nations. Consequently, the distinctiveness of national cultures has diminished. We seem to be moving toward universal membership in a common global culture.

However, in matters of society and culture we have the right and the responsibility to choose. We have the right to maintain whatever aspects of our unique local or national cultures and communities that we choose to keep. And we have the responsibility to protect this right against the economic or political forces pushing us toward a single global culture or social community.

We also seem to be moving toward a single global economy. International trade has increased dramatically over the past few decades, first under the various GATT agreements and now under the WTO. All of the national economies of the world are interconnected through their dependence upon each other for trade. Problems anywhere in the world economy, with Japan and Argentina being recent examples, create economic problems for nations all around the globe. However, the global economy is made up of numerous distinct markets – including national markets and various multinational trade groups, such as those defined by the North American Free Trade Agreement (NAFTA) and the European Union (EU). However, the implicit purpose of the WTO is to remove all restraints on trade among nations and among trade groups, and thus, to create a single global market.

In the matter of a single global market, we also have a right and a responsibility to choose. Every nation has the right to maintain those aspects of its local and national economies that it deems necessary to protect its resources and its people from exploitation. In a truly “global free market,” the social and political boundaries that now protect nations from such economic exploitation would no longer exist. Again, to the crux of the WTO controversy, we must ask, “What are the implications of removing the economic boundaries among nations, thus creating a single global market?”

Perhaps the best way to begin addressing this question is to examine the boundaries that currently restrain globalization and to ask why those boundaries are there in the first place. The boundaries that exist in nature, the ecological boundaries, were put there by natural processes. Such physical features as oceans, mountains, and even rivers and ridges, separate one physical bioregion from another. Why do such boundaries exist within nature? Perhaps, because nature is inherently diverse and boundaries are nature's way of defining its diversity. Boundaries separate and define the form or structure of those things that support life: sunlight, air, water, and soil. Boundaries also define the physical structure of all living things: bacteria, fungi, plants, animals, and humans. We know also that biological diversity is necessary for life; diversity that distinguishes cells, organs, and living organisms from each other; diversity that gives resistance, resilience, and the regeneration ability to living communities. Without diversity, without boundaries, nature could not sustain life, including human life.

Cultural and political boundaries are those things that define distinct “communities” of people – including cities, states, and nations. We established such boundaries to facilitate relationships among people within boundaries and to differentiate between relationships among people within a given “community” and their relationships with people in other “communities.” Within cultural boundaries, relationships were nurtured to enhance social connectedness and personal security. Boundaries “between” communities maintain some sense of identify, and thus, maintain diversity among different groups or collections of people. Diversity among communities maintains choices and opportunity for those of the current generation and for those of generations to follow. Historically, whenever one human culture or society has become dominate, but has then failed, alternative cultures and societies has always been available to restore health and growth, and thus, to provide resilience, and long run security for human progress. Without cultural diversity, there would have been nothing to replace the long line of failed societies of the past.

In earlier times, cultural and political boundaries tended to coincide with natural boundaries – oceans, mountains, rivers, and ridges. However during the industrial era, economic and political considerations have taken priority over natural boundaries in defining our social relationships. Wars have resulted in redrawing of national boundaries along lines that have little relationship to either topography or culture. Towns and cities have expanded their boundaries with little regard for the best long run use of the land they have covered with highways, buildings, and parking lots. And with the trend toward a single “global community,” the remaining social and cultural boundaries that still define different groups of people, with diverse social, ethical, and moral values, are being largely ignored.

With some notable exceptions, economic boundaries, over at least the past century, have been the same as national political boundaries. Historically, each nation has had its own currency, and has maintained economic relationships among those “within” nations as separate and distinct from economic relationships “among” nations. The British Empire of the early 1900s, which once included a fifth of the globe, might have been considered a single economic unit. More recently, the North American Free Trade Agreement and the European Union represent attempts to encompass several nations within a single economic boundary. But, most economic communities are still defined by the boundaries of single nations.

The basic purpose of economic boundaries is to promote "free trade" within the boundaries of communities and to carry out "selective trade" among those communities that are separated by economic boundaries. Economic diversity, as defined by economic boundaries, is necessary for division of labor and specialization. If all national economies were to lose their distinctiveness, becoming as one, all potential gains from trade among nations would disappear. Historically, economic diversity among nations also has been considered a necessity to ensure choice and opportunity – to ensure health, growth, resilience, and long run security of the global economy. Humanity has not been willing to put all of its "economic eggs in one basket."

So, why have leaders of the major economic powers of the world decided now to put all their "economic eggs" in the "WTO basket?" The most logical answer seems to be that world leaders are now motivated more by short run economic consideration than by longer run concerns for human culture or for the natural environment. In this respect, other nations quite likely are being misled by the "economic culture" of the U.S., which now dominates the global economy. The tremendous growth of the U.S. economy over the past century is widely attributed to our "competitive, free market" economy. Because of this growth, a new "culture of economics" now holds sway among many of the most economically powerful nations of the world.

Within this culture, economic boundaries are viewed as obstacles to trade, as limiting the ability of investors to maximize economic efficiency. "Free trade" among all nations would result in a more efficient global economy, they say, thus benefiting all people of the world. Current barriers to trade, they say, usually are nothing more than artificial, political restraints designed to protect specific individuals and industries within nations from economic competition with more efficient producers in other nations. Thus, the WTO should work to remove such barriers, allowing the most efficient producers in the world to produce the world's goods and services, resulting in the lowest possible cost of goods and services to consumers everywhere – so they claim.

Such claims are based on economic theories of trade that historically have made "free trade" something of a "sacred tenet" of economics. This is true particularly among the more conservative of economists, whose views are now in vogue. Contemporary "free trade theory" has its foundation in the early 1800s, primarily in the writing of British economist, David Ricardo. Ricardo showed that when two individuals choose to trade, each is better off after the trade than before. People have different tastes and preferences, and thus, each person values the same things somewhat differently. So, if I value something you now own more highly than I value something I own, and you value the thing that I own more highly than you value the thing you own, we will both gain by trading. I will get something that I value more than the thing I now own and so will you.

The same concept can be used to show the potential gains from trade associated with economic specialization. For example, one farmer may be a more efficient producer of one crop, e.g. tomatoes, and another farmer may be a more efficient producer of another, e.g. green peas. If so, one farmer can then specialize in green peas and the other in tomatoes. The better tomato producer can then trade tomatoes for peas and the green pea producer can trade peas for tomatoes, and they both will be better off than if they each tried to produce both peas and tomatoes.

Even if one farmer is a better producer of both peas and tomatoes, the other farmer will have a "comparative advantage" in producing one or the other. Let's say the first farmer could produce either 4 tons of green peas or 80 tons of tomatoes on a hectare of land and a given amount of labor, and capital. Assume a second farmer could only produce 3.3 tons of green peas or 60 tons of tomatoes on a hectare of land using the same amount of labor and capital – not as much of either as the first farmer.

If the first farmer decided to produce only peas, he or she would have to forego 20 tons of tomatoes for each ton of peas produced (80/4=20). However, if the second farmer decided to produce peas, he or she would only have to forego 18 tons of tomatoes for each ton of peas (60/3.3=18). In economic terms, this means that the second farmer has a "comparative advantage" in producing peas, because his or her "opportunity cost" of producing peas is less. Using the same logic, the first farmer has a lower "opportunity cost" of producing tomatoes (0.050 tons of peas per ton of tomatoes (4/80), compared with .055 tons of peas per ton of tomatoes (3.3/60)). The "opportunity costs" for both crops are lower if the second farmer specializes in producing peas and the first farmer specializes in producing tomatoes.

Although the arithmetic gets messy, if the second farmer specializes in peas and the first in tomatoes, and they trade their surpluses to each other, both will be better off than if each produces some peas and some tomatoes. Of course the real world is much more complex than this simple "two producer, two commodity" example, but this simple one-on-one trade situation is still at the heart of contemporary economic trade theory.

So, if both traders gain from specialization and trade, what's wrong with "free trade?" The problems arise because "free trade" between two independent individuals, in the context of the early 1800s, does not accurately reflect the reality of trade among nations in the early 2000s.

First, trade is truly free only if both partners are "free not to trade." Participants in "free trade" must have an "interdependent" relationship. Interdependence implies that people relate to each other "by choice," not "by necessity." If one trading partner is dependent on another, the dependent partner may have no choice but to do whatever is necessary to maintain the relationship. "Interdependent" relationships can only be formed between two otherwise independent entities. When both are independent, neither is compelled to either form or maintain the relationship. Under such circumstances, trading relationships are formed only if they are beneficial to both and continue only so long as they remain beneficial to both.

Trading under conditions of coercion, under explicit or implied threats of retribution, is not free trade. The school kid that "trades lunches" with the bully, under threat of bodily harm, is not participating in free trade. Neither is a weak nation that trades with a strong nation, under the threat of denial of military protection from some global tyrant. Nor is it "free trade" if one nation is dependent on the other for its economic wellbeing, as in cases where one nation has built up large debts to another. Poor nations are made dependent on rich nations by their lack of economic wealth, economic infrastructure, and technological advantage, regardless of their inherent worth to humanity. In many cases, rich nations are able to exploit the workers and resources of poor nations through trade, because the poor see no other way to avoid physical depravation or starvation of their people. Trade when one party feels compelled to trade is not "free trade." Coerced trade is not "free trade."

Second, "free trade" assumes "informed trade." Both parties must understand the ultimate consequences of their actions. If a car dealer trades cars with a customer, knowing his car is a gas-guzzler, needs lots of repairs, and is unsafe to drive, and trades the car without informing the customer, this is not a "free trade." When a developed nation encourages a lesser-developed nation to produce for export markets, knowing that such production will lead to exploitation of their natural and human resources, and does not inform them of the consequences, this is not free trade. The "leaders" of the lesser-developed nations may reap benefits from such trades, often including bribes or payoffs from the outside exploiters, but the resources of the lesser-developed nation will be exploited rather than developed. The people will be left with fewer opportunities for developing their country than they had before. The exploiters know the consequences but the exploited do not. Uninformed trade is not "free trade."

Third, "free trade," in economic theory, implies that the decision is made by an individual, not a collection of people or a nation. Individuals are whole people, presumably absent of unresolved internal conflicts regarding the relative values of items to be traded. A person trades only if they decide trading is good for them as a whole. Nations cannot think with one mind or speak with one voice. Nations, as large collections of individuals, may make and carry out trade agreements to which a substantial portion of the nation's population is opposed, both before and after trade takes place. The economic rational for such agreements is that if the economic benefits to those who favor trade more than offset the economic costs to those who oppose it, the nation as a whole will benefit from the trade.

Economics is incapable of dealing with social consequences of trade, such as equity or justice. In economics, a nation is said to gain from trade if those who benefit from trade "could" compensate those who lose and still have something left over. Of course, the gainers are under no legal obligation to compensate the losers, and rarely, if ever, do so. And in economics, it doesn't matter that the rich are made richer and the poor are made poorer. In economics, it doesn't really matter how many people are made "relatively" worse or better off by trade, as long as trade results in greater total wealth and growth of the overall economy. Free trade doesn't address issues of social equity or justice.

Finally, the foundational principles of economic trade theory are rooted in a "barter economy" – people "trade" things rather than buy or sell things. In an international currency economy, comparative advantages in trade can be distorted by fluctuations in currency exchange rates that have nothing to do with relative productivity. Such fluctuations can cause the exports from one nation to become more or less costly to importers from another nation for reasons totally unrelated to changes in production efficiency. Under such conditions, “free markets” do not result in efficient resource use. Trade theory assumes differences in monetary prices reflect differences in real value.

In classic trade theory, also, each trading partner uses their individual resources, land, labor, capital, technology, etc. to do whatever they do best – to realize their comparative advantage. No consideration is given to the possibility that one nation might instead transfer some of their resources, such as capital and production technology, to another nation where they might generate even greater profits. Mobility of capital and technology, hallmarks of today's global economy, eliminates the “comparative advantage” of higher cost nations, forcing them to import from lower cost nations, devaluing both land and labor in the higher cost nation to globally competitive levels. The classical economic concepts of comparative advantage did not anticipate international mobility of capital and technology.

Because of all these inconsistencies between economic theory and economic reality, the theory of economic “free trade” does not reflect the reality of “international free trade” today. Perhaps more important, opposition and open defiance of the WTO, from countries around the globe, indicates that any further expansion of trade, being forced upon unwilling people by the WTO, almost certainly will “not” be “free trade,” but “coerced trade.”

So what are the implications of market globalization for international agriculture, and specifically, for the sustainability of small horticultural farms? First, the implications will be different in different parts of the world, because of the wide diversity in current size and ownership structure of horticultural production units in different countries. Obviously, large differences exist between agriculture in the “developed” and “developing” countries of the world. However, significant differences also exist within these two communities of nations.

The European Union (EU) and the United States provide a convenient example of contrasts within developed economies. Horticultural production in Eastern Europe is carried out in predominantly family-based enterprises (Avermaete, 1997). Historically, fruit and vegetable farms were small, family operations, located close to the cities, and focused on producing for local consumption. Over time, however, some of the more specialized operations expanded in size, as lower transportation costs allowed them to compete in more-distant markets. In Europe today, small-scale family operations still co-exist with these larger specialized operations, with each focusing on different markets.

Approximately 1.8 million farms in the EU produced fruit and vegetables in the early 1990s. Many of these obviously were small family enterprises oriented toward home consumption, as they averaged only 1.3 ha. in size overall. Some 100,000 of these were classified as commercial operations specializing in production of vegetables, averaging 4.2 ha. in size, and 350,000 were commercial operations specializing in production of fruit, averaging 7.9 ha. in size.

Horticulture in the United States has experienced the same basic trends as in the EU – toward geographic specialization and large-scale production. However, operations in the US tend to be larger than in Europe. The US 1992 Census of Agriculture reported 29,605 farms producing vegetable and melons, 99,514 farms producing fruit and nuts, and 39,712 producing various other horticultural crops. The average size of US horticultural farms was 21 ha. for fruit and nut farms and 50 ha. for vegetable and melon farms – far larger than in the EU.

However, for both the US and EU, about 25 percent of the largest horticultural producers account for about 75 percent of total fruit and vegetable production. Over the past decade, both the average size of farms and percentages of production accounted for by the larger commercial operations undoubtedly have increased significantly in both the US and EU.

Comparable data are not available for many of the developing countries. However over the past decade, the fastest growing fruit and vegetable regions of the world have been Asia (particularly China) and South America (particularly, Brazil and Chile). Asia now accounts for more than 60 percent of worldwide vegetable output, and China alone accounts for about 25 percent of world production of apples (Segre, 1998). With the exception of a few large corporate operations that serve export markets, available data indicate the vast majority of production units in Asia and South America are smaller, family operations serving local markets.

In general, regardless of the region of the world or the segment of agriculture considered, the vast majority of all farms are still small farms, with many still serving local markets. However, the vast majority of total agricultural output is accounted for by a small proportion of larger, specialized commercial operations, oriented toward serving global markets. And increasingly, these large, export-oriented agricultural operations are controlled, if not owned outright, by giant multinational corporations.

As diversified family farmers have been replaced by large, specialized production units, independent food processors and wholesalers have been displaced by giant food processing and distribution firms. These large food processing and distribution operations more recently have combined, through various types of alliances and joint ventures, into five or six even-larger “global food chain clusters.” As the four or five dominate global food retailers link up with existing “global food chain clusters,” they increasingly will control all phases of the global food system from “conception to consumption,” including agricultural production (Heffernan, 1999, Hendrickson, 2001).

The two dominant trends in agriculture today, globalization and corporate consolidation, are not just coincidental, but almost certainly are intentional. Trade negotiators for the more industrialized nations, the US in particular, are the driving force within the WTO demanding ultimate removal of all social and ecological barriers to trade. The support of multinational agribusiness corporations is the primary motivating force behind these negotiators. With all political constraints to trade removed, the multinational corporations would be free to treat the world as a single production area and single market, and thus to maximize profits globally.

The world economy envisioned under the WTO presumably would operate much as a national economy. "International commerce" would resemble "interstate commerce," and no individual member nation would be allowed to have laws interfering with such commerce. Under the WTO, nothing could be arbitrarily excluded from "international commerce." The WTO would decide what nations can and cannot exclude from the world marketplace. And, no seller or buyer would be allowed to offer different prices or conditions of trade to different nations, for any reasons.

Under such rules of trade, a nation could not subsidize its agriculture by any means that might be trade distorting; that is, it couldn't subsidize producers of one commodity more than it subsidizes producers of another. A nation could not establish environmental, health, or safety standards for its production processes that were more restrictive than those specified by the WTO. A nation could not close its borders to WTO approved "cultural exports" from other nations – movies, television programs, clothes, and magazines – no matter how repulsive they may be to some residents of that nation. A nation could not refuse to allow its natural resources, such as minerals, oil, or even water, to be sold to another nation. And, the WTO would stand ready to enforce merchandise patents and intellectual property rights globally, regardless of whether the people of the world agree that all things, such as genetic life forms, should be patented. These are but some of the many potential consequences of the WTO vision of a single global economy.

In essence, removal of national economic boundaries would open the world to "corporate colonization." Historically, a "colony" has been defined as a geographic territory, acquired by conquest or settlement by a people or government previously alien to that territory (Encarta, 1998). In general, a colonial relationship is created when one entity extends its sovereignty and imposes control over another people or territory. In the case of "corporate colonization," it is the *corporation*, rather than a *people* or *government* that extends its sovereignty and imposes its control over the *economies* of nations. Nations lose control over their individual economies as their economic boundaries are removed, allowing the multinational corporations, previously alien to their countries, to expand across political boundaries at will.

The potential for economic colonization is inherent, so long as the world is composed of nations at radically different stages of economic and technological development. Those in the more developed economies will always be tempted to dominate those in the less developed economies. The emergence of multinational corporations, lacking a strong affiliation to any nation, makes those in the less developed areas or all nations vulnerable to global corporate domination. Such disparities in power, however, only make colonization possible – not necessary or inevitable. The powerful are not always able to expand and dominate the weak, as long as the weak have the political means to resist. Once the economic boundaries are removed, however, there will be no political means to resist.

As with political colonialism, there are strong arguments both for and against economic colonialism. Clearly, multinational corporations can bring numerous economic benefits to people in less developed economies, including greater access to investment capital, more employment opportunities, and higher personal incomes. A stronger economy also provides opportunities for governments to spend more for public transportation, health care, education, national defense, police protection, and other social welfare programs.

However, reliance on outside corporate investors for capital and technologies brings with it significant social and ecological risks. As with political colonization, life-styles are disrupted, cultures are destroyed, and entire communities, nations, and races of people may be economically subjugated by the corporations. A nation's natural resources – minerals, petroleum, forests, biological diversity, soils – may be exploited to maximize corporate profits, because there is no long term corporate commitment to any particular people, place, or culture. Decades after political colonization has ended, many so-called Third World countries still harbor a deep resentment, sometimes hatred, toward their former "colonial masters," in spite of the numerous economic, health, technological, and educational benefits they received. There certainly is no reason to believe that an after-the-fact assessment of benefits and costs will be any less condemning of the corporate colonization process.

Under contemporary international standards of human rights, political colonialism is no longer considered excusable – no matter what the potential economic or social benefits. Colonialism conflicts directly with inherent rights of national sovereignty and self-determination. The 19th-century empire builders, however, believed they had a moral responsibility to rule the "backward peoples" of the world, in order to bring them the fruits of Western civilization (Encarta, 1998). Many in the more developed nations today believe they have a moral responsibility to develop the "less developed economies" of the world, in order to bring them Western prosperity. The industrial nations have tried, without much success, to impose their industrial economic model on the rest of the world through various government- and foundation-funded international economic development programs.

From an international policy perspective, economic colonization by multinational corporations is but another means of developing the "less-developed economies" of the world. The next stage of development, for most less-developed countries, is the transition out of agriculture and into manufacturing. This transition cannot take place until agriculture is industrialized, making it possible for the agricultural sector to produce more food with fewer farmers, thus freeing farmers to work in the factories and offices of the new industrial economies. Agricultural globalization will make it possible for the agribusiness corporations to industrialize the agriculture of these lesser-developed economies. Thus, agricultural globalization is seen as a necessary prerequisite to global economic development.

Before addressing the implications of agricultural globalization on sustainable horticultural farms, we must address the sustainability of agriculture in general. First, any form of sustainable development, including sustainable agriculture, must meet the needs of the present while leaving equal or better opportunities for the future. To meet this standard of sustainability, a system of production and distribution must be ecologically sound, economically viable, and socially responsible. Lacking any one of these three aspects, a system quite simply is not sustainable over the long run. Globalization is a strategy designed for short-run economic exploitation, not for long run societal sustainability.

A sustainable food system, to be ecologically sound, must work in harmony with nature – not attempt to dominate or conquer nature. Nature is inherently diverse. Diversity in nature is necessary to support life within nature. "Boundaries" in nature define the diversity of landscapes, life forms, and resources needed to support healthy, natural, sustainable production processes. Fence rows, streams, and ridges define unique agroecosystems within which nature can sustain different types of human enterprises. Economic globalization ultimately will result in removal of fence rows, diversion of streams, and leveling of ridges, to facilitate standardization of functions and homogenization of production processes. The natural boundaries needed for sustainability will be removed to achieve greater economic efficiency. Economic globalization ultimately will destroy ecological sustainability.

A sustainable food system, in being socially responsible, must function in harmony with human "communities," including towns, cities, and nations. Humanity is inherently diverse. Diversity among people is necessary for "interdependent" relationships – relationships of choice among unique, independent individuals. Although we have our humanity in common, each person is unique, and we need unique human "communities" within which to express our uniqueness. Social and cultural boundaries define those "communities" – towns, states, and nations. Globalization will remove those boundaries and will homogenize global culture and society. The natural boundaries needed to sustain social responsibility will be removed to achieve greater economic efficiency. Economic globalization ultimately will destroy social sustainability.

A sustainable food system, to be economically viable, must facilitate harmonious relationships among people and between people and their natural environment. The inherent diversity of nature and of humanity must be reflected in diversity of the economy. Although potential gains from specialization are real, such gains are based on the premise that people and resources are inherently diverse, with unique abilities to contribute to the economy. Competitive capitalism is based on the premise that individual entrepreneurs make individual decisions and accept individual responsibility for their actions. If globalization is allowed to destroy the boundaries that define the diversity of nature and people, then it will destroy both the efficiency and sustainability of the economy. Economic globalization ultimately will destroy even economic sustainability.

In a global agricultural economy, large farms will continue to displace smaller farm in the global marketplace. Increasingly, the larger farms will be controlled by giant multinational corporations. Many small farms depend on sales of internationally traded commodities to provide cash farm income, in developed as well as less-developed countries. The most important aspect of their farming operation may be its non-cash contributions to their quality of life. In less-developed countries, the major non-cash contribution of farms may be food, clothing, and shelter, while in other countries it may be a healthy environment, privacy and security, and an independent life-style. In both cases, however, the economic viability of the farm may depend on cash income from sales of internationally trade commodities. Under globalization and corporate colonialism, small independent family farms quite simply will not have access to markets for internationally traded commodities. Essentially all such commodities will be produced under comprehensive contracts offered by corporations linked to one of the "global food clusters." Only the larger farming operations will be able to secure such contracts, and in many countries, such operations may be corporately owned and operated.

Commercial horticultural markets will become geographically specialized globally. In those areas of the world with an economic comparative advantage in horticulture, the larger farming operations will be consolidated and absorbed into one of the "global food clusters" – through contract or outright ownership. In those areas lacking a comparative advantage in horticulture, the commercial market infrastructure for horticultural crops will be dismantled due to lack of use. Thus, small family horticultural operations will be denied access to markets for internationally traded commodities in both cases. Small farmers worldwide rely on horticultural crops not only for their in-home own use but also for cash income, and thus, for their economic viability. Thus, globalization has important implications not only for the economic viability of small-scale horticulture but for the sustainability of small family farms everywhere.

The implications of market globalization and corporate colonialism are no more acceptable than were the implications of earlier attempts at cultural globalization and political colonialism. But with such powerful economic and political forces promoting globalization, how can we ordinary people expect to stop it. First, we can help people realize that the undeniable existence of a global ecosystem, a global society, and a global economy does not justify market globalization – i.e., the removal of all economic boundaries among nations. Natural boundaries are necessary to ensure ecological integrity. Cultural boundaries are necessary to ensure social responsibility. And economic boundaries are necessary to ensure long run economic viability. Without boundaries, the world will tend toward entropy – toward a world without form, without structure, without order, and without life.

Every nation has both a right and a responsibility to protect its people and its resources from exploitation, just as every person has a right and responsibility to protect their person and property from exploitation. Globalization would deny these most fundamental of human rights to the "communities" of people that constitute the nations of the world. People need to have healthy relationships with each other and with the earth, but healthy relationships are relationships of choice, not relationships of coercion. Global society needs a world forum, such as the WTO might be – not to remove boundaries, but to ensure that every person of every nation is protected from economic exploitation. We must reclaim our rights to individual and national sovereignty.

Other things we can do to fight globalization are more tangible and practical – and many of these things are particularly relevant to horticultural producers and marketers. We can all help develop more sustainable, local alternatives, which will reduce our reliance on multinational corporations. For example, millions of farmers and consumers all around the world are already joining forces to develop more sustainable, local food systems. These people come together regularly within their local communities at farmers markets, CSAs, community gardens, and at other venues where farmers and consumers meet around food. The central focus of many, if not most, of these alternative food systems is horticultural crops – vegetables, fruits, flowers, etc. The sustainability of small family horticultural farms in the future will depend on the evolution of these alternative niche markets of today. As these markets evolve, small horticultural farms of the future may well become still greater in number, far more important to human nutrition and health, and even more profitable for small farmers.

Perhaps one of the most common of misperceptions today is that niche markets make up only a small part of total markets and that niche marketing will always be marginal to the marketing mainstream. In reality, all consumer markets are niche markets, because all individual consumers have different tastes and preferences. It's a fundamental principle of economics, the utility or economic value of anything depends of individuality – on "who" has it and "who" wants it, and not just on what it is, where it is, and when it's available.

The industrial food system has focused on minimizing the cost of changing form, place, and time – on efficiency of processing, transportation, packaging, and storage – through systems mass production and distribution. In attempting to minimize costs, food production and distribution systems have become highly specialized, standardized, and centralized, and people have been treated as if we all had much the same tastes and preferences. Industrial systems are inherently inefficient in doing a lot of different things for a lot of different individuals.

As we move into the post-industrial era of economic development, however, the focus is shifting from minimizing costs to maximizing individual consumer satisfaction. Industrial foods have emphasized superficial product differentiation and "mass-produced convenience" – packaging, preparation, and home delivery – to make industrial foods more acceptable to individual consumers. Ultimately, however, the bulk of the food market will go to those who give individual consumers the foods that they actually want – choices of food with flavor, freshness, nutrition, and integrity – not just food that is quick, convenient, and cheap. Small family horticultural farms that are focused on niche markets are on the frontier of the new post-industrial food system.

Thus, successful small farmers of the future must give an even higher priority to local markets in developing more sustainable farming systems. They must realize they simply will not be able to sustain their farming operation by competing with the multinational food corporations in the emerging global economy. They must focus on those quality attributes of products that the multinational corporations cannot match with the industrial system of production and distribution – such as nutrition, freshness, flavor, and food safety.

The perceived safety of industrial systems of production and distribution is an illusion created by the complexity of government rules and regulations that have been promulgated to alleviate food consumer's concerns. In reality, these rules and regulations are necessary only because of the separation of consumers from producers in the industrial food systems and because of the risks inherent in systems of mass production and distribution of food. When farmers and their customers relate to each other personally, customers have a personal knowledge of how their food is produced and handled and farmers know their products must be safe and wholesome or they will have no customers. When producers and customers are separated by thousands of miles and multiple layers of food marketing firms, there is no relationship of trust, and consumers must rely on complex rules and regulations, which are virtually impossibly to enforce with consistency. In addition, if a small farmer marketing locally mishandles food, a few customers suffer the immediate consequences, but the farmer will likely be forced out of business. When a large, corporate food processor mishandles food products, thousands of people suffer the consequences, and at most, the food processor will settle a few lawsuits, shift production to another processing plant, if necessary, and continues with business as usual.

Equally important to food quality and safety, small farmers must focus on their personal integrity, dependability, and commitment, on developing personal relationships with their customers – something that corporations simply cannot do. Again, corporate producers attempt to create the illusion of personal integrity, through such strategies as unconditional guarantees, “rain checks” on advertised specials, identifying products with specific producers, and even inviting farmers into their stores. However, receiving a refund or returning to a store to receive a special price is not a substitute for receiving the right product at the right price in the first place. A picture of a farmer is not a substitute for knowing the farmer who produced your food; and most consumers know a farmer in a supermarket probably is a promotion gimmick backed with very little locally grown product. Corporations are not people, and thus, can't have personal relationships with their customers.

Public researchers and educators must shift their efforts from development of industrial, commercial technology, including biotechnology, to helping farmers develop more sustainable, localized, systems of production and marketing. The multinational corporations have both the profit motive and the financial means of developing whatever commercial, industrial technologies may be needed for the future benefit of society. Publicly funded research and education should be focused on doing those things of benefit to society that the private sector of the economy will not do. The private economy offers no economic incentive for ecological integrity and social responsibility, or even long run economic viability. Sustainability is a responsibility that must be met through the public sector – including public research and education. Nowhere is such public research more likely to yield greater societal benefit than in production and marketing of horticultural crops to sustain small family farms in both developed and developing countries of the world.

Supporting local food systems doesn't mean that we have to give up those things that can't be produced locally. Trading when we are “free not to trade” can be beneficial to all concerned. We, all people of all nations, simply need to attempt to produce, sell, and buy locally to the extent necessary to sustain our local and regional food systems. The sustainability of global food production depends upon the food security of all nations. A nation that cannot feed its people in a time of crisis is no more secure than is a nation that cannot defend itself in a time of crisis. Those nations that cannot achieve internal food security need to form food alliances with other nations that are as secure as their defense alliances with other nations. Nations and regions can and should continue trading with other nations and regions to help ensure the sustainability of agriculture everywhere on the globe. But, relationships among regions and nations must be “interdependent,” rather than “dependent,” if the global food system is to be sustainable. We must maintain boundaries in order to maintain our identity, our integrity, and our ability to act interdependently.

It would be easy to be skeptical about the possibility of success in developing sustainable local food systems – such systems currently make up such a small part of the huge global food system. Committed farmers, consumers, researchers, and educators may seem too few and too weak to confront the giant global food corporations. However, the trend toward a global food system, occurring over the past several decades, took place one farmer, one customer, one scientist, one person, at a time. One-by-one, as scientists changed the focus of their work, as farmers changed what they produced and where they sold it, as consumers changed what they ate and where they bought it, a food system that had been local became global. Again, one-by-one, we can and must make the changes needed, as scientists, as producers, and as consumers, to create a sustainable food system. Can we prove that a sustainable food system is possible? Maybe not. But growing and compelling evidence suggest that the current industrial food systems – with its large, specialized, corporate controlled production operations – is neither ecologically sound nor socially responsible, and thus, is neither economically viable nor sustainable over the long run. Why shouldn't publicly funded agricultural scientists be leading the way by at least attempting to prove that, in spite of agricultural globalization, small family horticultural farms can be, and must be, sustained?

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