

Towards an Economics of Happiness

HELENA NORBERG-HODGE AND STEVEN GORELICK

Introduction

Around the world there is a growing awareness that, in order to build a peaceful, equitable and sustainable future, we must rethink the very foundations of our current economic system. The global economy is at the root of many of our present crises – from rising poverty and hunger to increased pollution and depleted resources, from ethnic violence to economic breakdown. Clearly, if we are to turn these crises around, we need to closely examine the system that created and perpetuates them. We must take a broad overview, examining the effects at economic, ecological and social levels. Understanding how globalisation – the promotion and implementation of the global economy – has brought these problems about can help us to see the most appropriate solution.

We have studied the effects of global economic development on individuals and cultures for the last three decades and have concluded that the most strategic and effective way of building a more positive future is through economic localisation. Fundamentally, localisation is about decentralising economic activity – producing for people's needs in a way that can be adapted to the ecological, cultural and political structures and needs of each locale.

Nonetheless policymakers insist that globalisation is creating a better world for everyone. Part of the problem results from the way globalisation's promoters measure 'progress'. It is all too easy to compare the consumer cornucopia in rich countries today with what was available 50 or 150 years ago. More often, the baseline from which comparisons are made is rooted in the Dickensian period of the early industrial revolution, when exploitation and deprivation, pollution and squalor were rampant. From this starting point, child-labour laws and the 40-hour workweek look like real progress. Similarly, the baseline in the South is the immediate post-colonial period, with its uprooted cultures, poverty, over-population and political instability. Based on the misery of these starting points, political leaders can argue that our technologies and our economic system have brought a far better world into being, and that globalisation will bring benefits to people in the remaining 'undeveloped' parts of the world.

In reality, however, globalisation is merely a continuation of a broad process that started with the age of conquest and colonialism in the South and the Enclosures and the Industrial Revolution in the North; from then on a single culture and economic system has relentlessly expanded, taking over

other cultures, other peoples' resources and labour. Far from delivering us from poverty, the globalising industrial system continually creates it. It is vital that we connect the growing physical and emotional poverty to the whole industrial system, to a process that robs people all over the world of their natural resources, labour and self-respect. Our leaders simply fail to connect the dots between 'progress' and poverty.

Fortunately, more and more people on the ground are coming to see localisation as the key to economic stability, environmental protection and social harmony. Each year more projects are initiated which embody the ideals of localisation. Economic localisation is not synonymous with isolationism or narrow, self-interested protectionism. In order to work, it requires international collaboration on a far larger scale than we have now. Certain issues – such as global warming, nuclear proliferation, and genetically modified foods – affect us all, and these matters should be the foci of global cooperation. Instead of the World Trade Organisation, the World Bank and other agencies that work to advance the global economy, we need international bodies that will ensure protection of the environment and our human rights. Localisation means a better balance between local, national and global governance. It also means returning decision-making power on local issues back to the local level.

Reversing our headlong rush towards globalisation would have benefits on a number of levels. Rural economies in both North and South would be revitalised, helping to stem the unhealthy tide of urbanisation. Farmers would be growing primarily for local and regional rather than global markets, allowing them to choose varieties in tune with local conditions and local needs, thus allowing agricultural diversity to rebound. Production processes would be far smaller in scale, and therefore less stressful to the environment. Transport would be minimised, and so the greenhouse gas and pollution toll would decrease, as would both the financial and ecological costs of energy extraction. People would no longer be forced to conform to the impossible ideals of a global consumer monoculture, thereby lessening the psychological pressures that often lead to ethnic conflict and violence. Ending the manic pursuit of trade would reduce the economic and hence political power of global corporations and eliminate the need to hand power to such supranational institutions as the WTO, thereby helping to reverse the erosion of democracy.

In this paper, we will be focusing mainly on the disastrous impacts of the global economy on food and agriculture around the world. Adequate, wholesome food is vital to human well-being. There is nothing else that human beings produce that is needed by every person on the planet every day, yet that very activity has been relegated to a marginal position in

political governance. Most businesses and governments consider agriculture little more than a stumbling block to success in their international trade negotiations. We have been led to believe that small-scale diversified farming for local and regional market is an anachronism, an inefficient romantic remnant from the past. In fact, it is large-scale monocultural farms producing food for export that are inefficient. This industrial model of production is responsible for dramatic increases in environmental pollution, species extinction and even many human degenerative diseases, and only seems 'efficient' because so many of the costly subsidies that support it are hidden from view.

Before examining the consequences of the global food system, we want to look at another subject equally worthy of attention: the social costs of globalisation, and the consumer monoculture it promotes. Social cohesion or a sense of community is fundamental to human well-being, indeed to human happiness. As we shall see, globalisation has done much to fragment community and erode people's sense of self-esteem. Rebuilding or maintaining community is inextricably connected to a process of localisation.

Many people around the world have looked to the King's aspiration to foster Gross National Happiness in Bhutan for hope and inspiration. In terms of shifting direction towards a more positive future, Bhutan is in an ideal position. Neither farming nor the fabric of community has been destroyed in Bhutan as it has in other parts of the world. There is a vital opportunity to strengthen the structures that support community and local economies in the country, thus averting the social, ecological and economic collapse globalisation has brought about elsewhere.

Social Costs of Globalisation

In shifting to an economics of happiness, it is important to consider the impact of conventional growth on societies around the world. There is no better place to start than in the United States, since this the country that is held up as a model for the rest of the world. And a good way to measure the condition of American society is to take a hard look at America's children, since so many features of the global monoculture have been in place their whole lives.

An indication that the current system is not working as well as it may seem is that one in five American children have a diagnosable mental, emotional or behavioral disorder¹, and an estimated *five million* are being given at least one psychiatric drug. This disturbing trend is growing rapidly. The number of children ages 2-4 for whom stimulant and anti-depressant drugs have been prescribed increased 50 percent between 1991

¹ National Mental Health Association, "Key Facts and Statistics", www.nmha.org/children/green/facts.cfm

and 1995. In the following four years, prescriptions for anti-depression drugs rose even more steeply, climbing 151 percent for children in the 7-12 age group, and 580 percent for children six and under.²

Major depression is, in fact, a growing problem all over the developed world, with rates of occurrence rising in all age groups and in virtually every community. By 2020, at its current rate of increase, depression will rank second only to heart disease among the most disabling conditions in the industrialized countries.³

Compare this to the rates of depression among groups of indigenous people and it is clear that something has gone very wrong in Western culture. In the 1980s, for example, anthropologist Edward Schiefflin had to abandon his attempt to study depression among the indigenous Kaluli of New Guinea because there simply is no depression in that culture.⁴ Similar conclusions have been reached about other indigenous societies.⁵ The plain truth is that people living in intact indigenous cultures are generally far happier and content than people in the civilised west.

If it seems impossible to imagine 2-year old children so depressed that they need prescription drugs, it is equally difficult to imagine 15-year olds feeling so hopeless that they kill themselves: yet among America's young people, suicide is the third-leading cause of death.⁶ Equally hard to fathom are many other symptoms of social breakdown. Eating disorders, for example. The number of pre-pubescent children with eating disorders is on the rise in America, with girls as young as four showing signs of anorexia. Cosmetic surgery, another symptom of insecurity and poor self-image, is also increasing, with the number of teenage girls having their breasts augmented quadrupling, and liposuction procedures tripling, in just the past five years.⁷

Violence, a more common symptom of breakdown for boys, is also on the rise. There have been at least 25 school shootings in the US since 1996, claiming the lives of 35 students. The youngest killer was a six-year old boy.

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² Statistics from the National Disease and Therapeutic Index of IMS Health, in Lawrence H. Diller, M.D., "Kids on drugs", <http://www.salon.com/health/feature/2000/03/09/kiddrugs/index.html>, March 9, 2000

³ "Major Depression Facts", 2002, www.clinical-depression.co.uk

⁴ Al Kleinman and B. Good (eds.) *Culture and Depression*, University of California at Berkeley Press, 1985., p.101-133.

⁵ See for example Roald Amundsen's description of Inuit people in Northwest Passage, Helena Norberg-Hodge in *Ancient Futures*, and the journals of Christopher Columbus.

⁶ National Center for Health Statistics, unpublished work tables prepared by the Mortality Statistics Branch, Division of Vital Statistics, 1995 and 1996, accessed at <http://aspe.hhs.gov/hsp/97/trends/hc1-2c.htm>; also see Robert Wright "The Evolution of Despair", *Time* magazine, Aug 28, 1995.

⁷ "Shaping the Perfect Teenager", *CBSnews.com*, June 22, 2000.

⁸ "A Time Line of Recent Worldwide School Shootings", www.infoplease.com/ipa/A0777958.html

There are a number of reasons America's children have become so insecure and troubled – all of which can be traced back to the global economy and its systematic erosion of social cohesion. For one thing, Americans are continually uprooted. As corporations scour the world for bigger subsidies and lower costs, jobs move with them, and families as well: the typical American moves eleven times during their lifetime, continually severing connections between relatives, neighbours and friends.

Within almost every family, the economic pressures on parents rob them of time with even their own children. Americans put in longer hours at work than people in any other industrialised country, and the trend is ever upward: Americans work the equivalent of one week longer per year than they did a decade ago, and more than five weeks longer than in 1970.⁹ As a consequence more and more young children are relegated to the care of strangers in crowded day-care centres. Older children are often left in the company of violent video games or the corporate sponsors of their favorite television shows. Time spent in nature, which is fundamentally important to our psychological well-being, is increasingly rare.

Globalisation and the consumer culture it promotes thus work to displace the flesh-and-blood role models – parents and grandparents, aunts and uncles, friends and neighbours – that children once looked up to, replacing them with media and advertising images: rakish movie and rock stars, steroid-enhanced athletes and airbrushed supermodels. Children who strive to emulate these manufactured 'perfect' idols are left feeling insecure and inadequate.

This is not an unintended consequence. The goal of advertisers and the corporate marketers that hire them is to keep Americans perpetually discontented and insecure; in this condition they remain susceptible to the promise that happiness is only one more purchase away. The decision-makers that determine economic policy promote this heartless system. They fully realise that consumers are on a treadmill that drives the economy, and that if consumers are content with who they are and what they have, the economy would literally collapse.

In this sense, what is often seen as American 'culture' is not a product of the American people. It is, in fact, an artificial consumer culture being foisted on people through globalisation's greatest tools: advertising and the media. This consumer culture is fundamentally different from real cultures, which for millennia were shaped by climate and topography – by a dialogue between humans and the natural world. This is a new phenomenon, something that has never happened before: a culture determined by technological and economic forces, rather than human and ecological needs. It is not surprising that American children, many of whom seem to 'have everything', are so unhappy: like their parents, their teachers at school and

⁹ *Juliet Schor, The Overworked American, (New York: Basic Books, 1991).*

even their television heroes, they have been put on a treadmill that is ever more stressful and competitive, ever more meaningless and lonely.

As the globalisation juggernaut rolls along, the number of victims worldwide is growing exponentially. Today millions of children from Mongolia to Patagonia are targets of a fanatical and fundamentalist campaign to bring them into the consumer culture. The cost is massive in terms of self-rejection, psychological breakdown and violence. These children are just as vulnerable as their American counterparts to the sales pitches of corporate advertisers, who tell them that this brand of make-up will inch them closer to perfection, or that wearing that brand of sneakers will make them more like their sports hero. Sales of dangerous bleach for skin and hair, and contact lenses advertised as 'the colour of eyes you wish you were born with', are skyrocketing in the South. Of course, buying these products does not actually enhance quality of life, but it greatly profits centralised industry – the main beneficiaries and proponents of the global economy.

This psychological impoverishment is accompanied by a massive rise in material poverty. Even in America – the 'richest' country in the world – hundreds of thousands are homeless, and millions more live in poverty. And what about the multitude drawn into rapidly growing Third World slums every year, with little hope of escape? What about the factory workers in sweatshops and maquiladoras, and the small farmers in their dying rural communities? What about the indigenous peoples being driven to extinction, and those whose ways of life are so threatened by the forces of globalisation that they turn to religious fundamentalism, even terrorism?

Erasing other cultures, replacing them with an artificial culture created by corporations and the media, can only lead to an increase in social breakdown and poverty. Even in the narrowest economic terms, globalisation means continuing to rob, rather than enrich, the majority. In 1960, the income of the richest fifth of the global population was 30 times that of the poorest fifth; by 1997 the gap more than doubled, with the richest fifth receiving 74 times more than the poorest fifth.¹⁰ This is globalisation at work.

By forcing everyone on the planet to rely on the same, narrow range of resources, globalisation is creating artificial scarcity, thereby adding to real poverty and exacerbating violent conflict. Contrary to the often-repeated claim that global trade is making conflict less likely, a recent World Bank study has found that countries whose economies are highly specialised –

¹⁰ UNDP, "The Facts of Global Life", presskit for Human Development Report 1999, www.undp.org/hdro/E5.html

precisely what globalisation prescribes – are 20 times more likely to find themselves in civil war than countries whose economies are diversified.¹¹

With those in the industrialised world using ten times their share of the earth's resources, it is a criminal hoax to promise that everyone in the 'undeveloped' world can do the same. The global spread of this fantasy has been profoundly destructive to people's ability to survive in their own cultures, in their own place on the earth. It has even been destructive to its most privileged beneficiaries.

The Globalisation of Food and Farming

Resisting the spread of this model is of the utmost urgency. But for people in the most industrialised countries, another need is to find a way to recreate economies that support community rather than eroding it; that offer happiness and contentment rather than insecurity and endless striving; that are in harmony with nature, rather than destructive of it. Food must be at the centre of this shift, not only because it is a universal need, but because the global food economy is now expanding at a rapid rate.

As it spreads, it is creating crises the world over. Farmers in almost every country in the North are economically besieged, while in the South, people by the millions are being pulled off the land. 'Food scares' occur with alarming regularity, leading many to wonder whether the meal before them is safe to eat. Millions of acres of farmland in the US have been planted in genetically engineered crops, setting off trade disputes with Europe and Japan. People's awareness that corporations are gaining a stranglehold over the world's food supply has led some to ransack fast-food chains and agribusiness offices, and others to uproot genetically-engineered crops.

All of this turbulence has its origins in the industrialisation of food, which today goes hand-in-hand with economic globalisation. Food production is becoming ever more specialised, capital-intensive, and technology-based, and marketing ever more globalised. This direction is disastrous for people and the planet, yet policymakers insist on calling for more of the same: lower barriers to trade, higher technology, fewer farmers.

Industrial agriculture is based on a Western development model that has been imposed on the rest of the world, without respect for either cultural or biological diversity. In the West, where this form of agriculture has been practised longer, the problems inherent in large-scale monocultural production have become ever more apparent. If industrialised agriculture is not working in the region from which it originated, then how can it possibly work elsewhere? It is important that people in developing

¹¹ Paul Collier and Anke Hoefler, "Greed and Grievance in Civil War", March 2002, <http://econ.worldbank.org/programs/conflict/library/doc?id=12205>

countries have access to accurate information about the worldwide crisis in agriculture so as not to repeat the mistakes of the West, but instead to forge ahead on a healthier, more sustainable path.

In the West, in fact, there is now a growing movement in this direction, a groundswell of support for 'local food systems'. Such systems are smaller in scale, more diversified, and locally adapted. They favour foods produced nearby, rather than global commodities produced halfway around the world. The rising interest in local foods stems from an awareness that the long-term economic, environmental, and health costs of the industrial food system are too high, and a parallel awareness that local food systems can minimise all these costs simultaneously.

Below, we outline the many problems the global food economy has already created in the places it has taken root, and the many benefits that would follow from a shift towards the local.

The Marketing of Food

In the global system, food is often transported thousands of miles, embedding it with significant amounts of transport energy, pollution, and greenhouse gases. Thanks to 'free trade' treaties, transport subsidies, and artificially cheap fossil fuels, 'food miles' are increasing: in the UK, for instance, food now travels 50 percent further on average than it did in 1979.

¹²

The growth in food miles cannot be explained away by the greater availability of 'exotic' foods that cannot be grown locally: the logic of global markets leads to so much needless trade that many countries import and export the same product. In 1996, for instance, Britain imported 114,000 metric tons of milk, while *exporting* 119,000 tons.¹³ Trade of this sort greatly expands the distance food travels while benefiting only the speculators and large-scale agribusinesses that profit from government subsidies, exchange rate swings, and miniscule price differences.¹⁴

Not only does food travel further, but consumers do as well. Food marketing in the global economy is highly centralized, with the typical outlet being a giant supermarket serving a wide area. This pattern has led to a rise in the number of shopping trips consumers make – most often by car – and an increase in the distance each trip represents.

¹² *Sustain: The alliance for better food and farming*, Food miles – Still on the road to ruin? (London: Sustain, October 1999), p. 7.

¹³ *Food and Agriculture Organization, FAOSTAT, www.apps.fao.org*. See also Caroline Lucas, *Stopping the Great Food Swap: Relocalising Europe's Food Supply*, March 2001.

¹⁴ A similar pattern holds for many other commodities. In 1998, the UK imported 174,570 tons of bread, while exporting 148,710 tons; imported 21,979 tons of eggs and egg products, while exporting 30,604 tons; imported 158,294 tons of pork, while exporting 258,558 tons [Ministry of Agriculture, Fisheries and Food, *Overseas Trade Data System, UK Trade Data in Food, Feed and Drink* (London: MAFF, HMSO, July 1999)].

The marketing of local foods, on the other hand, is largely decentralised, with numerous small shops located close to where people live – often within walking distance. In many cases, farmers can eliminate one whole link in the transport chain by selling directly to consumers via Community Supported Agriculture (CSA) or ‘box schemes’, farm stands and farmers’ markets, or by sales made at the farm itself.

Global foods are wasteful of more than just transport fuels. They require more packaging to protect them from the rigours of long-distance transport, and still more to differentiate brands and attract consumers. Excessive packaging wastes energy, paper, and other resources, and leads to disposal problems. In the UK, for example, one-quarter of household waste is made up of packaging, most of which is used on food.¹⁵ Landfilling all this waste causes problems such as leachate leaks, while incinerating it contaminates the air with carcinogenic substances, and leaves behind a toxic ash residue.

Global trade would be impossible without huge transport infrastructures, which are costly not only to taxpayers, but to the environment. Multi-lane highways, for example, fragment landscapes, disrupt wildlife movements, and interfere with wild plant seed dispersal. Their construction entails cutting down forests, filling in valleys, leveling hills, and burying of miles of ecosystem under concrete and asphalt. Airports, shipping terminals, railway lines, and other transport facilities can be equally destructive. In South America, for instance, 2,100 miles of rivers are being altered – threatening the world’s largest wetland – to accommodate convoys of barges carrying soybeans and other commodities.

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The global food system also has a huge appetite for energy. Energy is needed to manufacture the chemical inputs used in industrial agriculture, to process and refrigerate foods, to fuel heavy farm equipment, and to transport food. Producing this energy has high environmental costs: hydroelectric dams disrupt ecosystems both upstream and down; nuclear plants generate tons of radioactive waste; oil refineries pollute air, soil, and water. The extraction, transport, and use of these fuels predictably lead to ‘accidents’ – like oil spills and radiation leaks – that can poison the environment for many years.

Local food systems, by contrast, have relatively low energy demands. These can often be met from nearby renewable sources – such as waterpower for small grain mills, solar energy for crop drying, and even animal power for farm use.

¹⁵ Anon. “Do you need all that packaging”, Which? London: Consumers’ Association, November 1993, p. 5.

¹⁶ Glenn Switkes, “Design Chosen for First Phase of Hidrovia”, World Rivers Review, vol. 11, n. 2, June, 1996.

Perhaps the most profound ecological impact of the global model stems from its demand that people abandon local goods for the monocultural products of the global economy. For food, there is no more insidious example of this than the effort of Nestlé and other agribusinesses to convince Third World mothers that breast milk – the most ubiquitous and healthy of local foods – is inferior to the powdered version those companies sell. The same principle is being applied to virtually every other product, as people are encouraged to believe that “imported equals *good*, local equals *crap*”, in the words of an advertising executive in China.¹⁷

The corporations that promote this consumer monoculture have few qualms about profiting from the cultural and racial self-rejection experienced by target populations. Thus, the president of McDonald’s Japan opined that if people in that country “eat McDonald’s hamburgers and potatoes for 1,000 years we will become taller, our skin white and our hair blond.”¹⁸

A global consumer monoculture is an unmitigated disaster for everyone, not just those induced to abandon their own identities. The small percentage of the earth’s population that lives a Northern consumer lifestyle has already so destabilised the biosphere that the earth’s ability to support human life in the future is increasingly in doubt. And yet the implicit message of economic globalisation is that the entire population of the planet should pursue that same unsustainable course. It is vitally important that people all over the world, but especially in the South, have access to information about what is really happening, rather than corporate propaganda. Only by understanding the true consequences of globalisation, while drawing on local knowledge, can people make sound decisions about their own futures.

Food Production

An emphasis on the *local* in food production is significantly better for the environment than an emphasis on the *global*. In large measure, this is because producing for global markets requires large-scale monocultures, which systematically erode diversity. On-farm diversity not only shrinks to the one or two crops grown for global markets, but even within those commodities diversity is disappearing, as identical high-yield strains are planted everywhere. Wild nature, meanwhile, adds nothing to the ‘bottom line’, and so is systematically excluded from the farm system.

This lack of diversity leads to a cascade of problems. Vast acreages of identical varieties are highly vulnerable to devastation by insects and blight; this in turn leads to repeated applications of pesticides and fungicides. Chemical fertilisers are also required, since monocultural farms exclude the

¹⁷ “Where the Admen Are”, *Newsweek*, March 14, 1994, p. 34.

¹⁸ Joel Bleifuss. “Will Ronald Eat McCrow”, *In These Times*, vol. 19, n. 3, p. 13.

farm animals that could replenish soil fertility with their manure. The use of all these chemicals not only damages the broader ecosystem, it kills the soil, making it prone to water and wind erosion. The use of large-scale farm equipment requires trees, shrubs and hedgerows to be removed, and further deadens the soil by compacting it and reducing its ability to absorb water.

Monocultural livestock production – commonly known as ‘factory farming’ – is also an environmental disaster. The thousands of tonnes of manure produced are highly polluting, and cause algal blooms and eutrophication of streams, ponds, and lakes. If the manure containment lagoons burst – as they did recently in North Carolina – the devastation can become widespread, poisoning wells and groundwater for miles around.¹⁹

Small-scale production for local markets, on the other hand, naturally tends to be more diverse: farmers have an incentive to produce the wide range of products people need. Since small farms are not designed to facilitate the use of large equipment, they also tend to retain hedgerows, woodlots, pastures, wetlands and fallow land, all of which have some use on a diversified farm. These in turn become nurturing habitats for diverse wild plant and animal species.

The overall diversity of small-scale farms makes them more stable and resilient, and less susceptible to losses due to weeds or pests. Those losses can be further minimised using low-impact techniques, like intercropping, rotations, and biological controls. Soil fertility can be maintained by the addition of composted manure and other organic matter, which also makes the soil more resistant to erosion.

While an industrial farm’s production is largely determined by global markets – which favour a narrow range of commodities and varieties – small-scale localised production is heavily influenced by local climate, resources, cultural preferences, and the availability of locally-adapted strains – and is therefore highly diverse. Farmers are able to focus on what their land can best produce, rather than forcing it to produce what distant markets demand.

Genetic Engineering

Since the beginnings of agriculture, farmers have selected for traits that make the most sense within their own particular environment, thereby providing almost every local food system with a remarkably broad range of locally adapted plant varieties and animal breeds. Indigenous farmers in the Andes, for example, cultivate some 3,000 different varieties of potatoes.²⁰ On the island of Java, small farmers cultivate over 600 different crop species in

¹⁹ A. V. Krebs, “Hurricane Floyd and Corporate Hogs: North Carolina’s 18,000-Square mile Cesspool”, *The Agribusiness Examiner*, n. 48, September 28, 1999.

²⁰ V.H. Heywood, executive ed. *Global Biodiversity Assessment, published for the United Nations Environment Programme by Cambridge University Press, 1995, p. 595.*

their gardens.²¹ Much of the food we eat today ultimately depends on the careful work, over many centuries, of farmers like these.

Now, however, an entirely new method for the creation of agricultural varieties has been developed. Rather than selecting for particular traits among plants and animals that have proven themselves in nature over centuries, genetic engineering technologies enable scientists to select traits in the laboratory. In many cases, scientists carry genetic material across entire species or phyla boundaries, bypassing reproductive constraints and creating varieties that could never have evolved in nature, even with the guiding hand of a skilled breeder. Fish genes have been implanted into tomatoes, and human genes into fish. There has even been research into engineering such labour-saving ‘advances’ as a featherless chicken that won’t have to be plucked.²²

Leaving aside the profound ethical implications of manipulating the genetic basis of life, this technology may have severe ecological repercussions. For one, the technology is now being used to *increase* the use of pesticides: Monsanto sells seeds that produce crops engineered to tolerate heavier doses of its best-selling herbicide, ‘Roundup’; Aventis markets similar seeds, but for use with its own ‘Liberty’ herbicide; and Cyanimid has produced seeds to be used with its ‘Pursuit’ and ‘Odyssey’ herbicides.

Perhaps most disturbing of all is the problem of ‘genetic pollution’, whereby crops or wild plants are accidentally fertilised by a nearby biotech crop. Although proponents of genetic engineering have claimed that such cross-fertilisation would be rare, it has not turned out that way. For example, Starlink, a transgenic corn variety, was planted on less than 1 percent of America’s corn acreage, but managed to contaminate the seed corn of more than 80 seed companies.²³

Genetic pollution has ominous implications for agricultural biodiversity. Research in the remote mountainous region of Sierra Norte de

²¹ *ibid.*, p. 742.

²² Mike Toner. “Cultivating Designer Fish”, *Atlanta Journal*, May 21, 1999; Colin Tudge. *The Engineer in the Garden*. London: Jonathan Cape, 1993; Luke Anderson. *Genetic Engineering, Food and Our Environment*. Devon, England: Green Books, 1999 [published in the US by Chelsea Green].

* Although the whole point of Roundup-Ready seeds is to enable more potent doses of the herbicide without endangering the marketable crop, Monsanto has attempted to confuse the public by claiming that Roundup-Ready seeds reduce the amount of Roundup herbicide needed. While it is true that the volume of Roundup sprayed onto crops may be reduced, the potency of this herbicide has been increased. Before Roundup-Ready seeds hit the market, Monsanto had to lobby the US Environmental Protection Agency to get the tolerance level for glyphosate (the key toxic ingredient of Roundup herbicide) raised from 6 parts per million to 20, because the new line of Roundup-Ready products would not be of much value if the herbicide could not be made more potent. The EPA readily consented [Lappé, Marc, and Britt Bailey. *Against the Grain: Biotechnology and the Corporate Takeover of Your Food*. Monroe, Maine: Common Courage Press, 1998, pp. 75-76].

²³ David Barboza, “Will Agbiotech’s Genetic Contamination Conquer the World?”, *New York Times*, June 10, 2001.

Oaxaca, for example, has shown that some of Mexico's native varieties of maize have been contaminated by transgenic DNA. So much genetic pollution is occurring that there is a danger that farmers – even organic growers – will soon be unable to find seed that is *not* tainted with engineered genetic material. “We have found traces in corn that has been grown organically for 10 to 15 years,” the head of an organic bread and cereal company in British Columbia said. “There’s no wall high enough to keep that stuff contained.”²⁴ Once released into the wild, this form of pollution can never be called back.

Furthermore, some genetically engineered plants may harm non-target insects, like monarch butterflies that eat the pollen from plants engineered with their own pesticides.²⁵ The marketers of these seeds still do not know for certain whether, for example, honeybees that collect pollen from those plants will be affected.

Claims about the potential of biotech crops to ‘feed the world’ obscure the fact that farmers in the poorest parts of the world are those least able to afford to buy new seeds every year. Those farmers are more likely to save seed from one year’s crop to plant the next – a practice that would be illegal if they used genetically-engineered seeds.

Food and Health

Local systems excel at providing nutritious, fresh food. Even so-called ‘fresh’ foods from the industrial system are usually inferior to local foods because they are often harvested days or even weeks before. Heirloom varieties of fruits and vegetables adapted to specific places are usually particularly flavourful and nutritious – more so than their industrial counterparts.

In the global food system, the dominant vegetable varieties are not those that are most nutritious, but those that are most visually appealing, most hardy under monocultural growing conditions, and best able to survive mechanical harvesting and long distance transport. What’s more, many industrial foods undergo a great deal of processing, which destroys vitamins and reduces nutritional content. Highly refined products like white flour, sugar, and rice have had most of their nutritional value removed.

Since processing can also remove much of the taste and colour from food, the industrial system compensates by adding artificial flavourings and colourings. Chemical preservatives are deployed to increase shelf life, and a range of other additives are used to facilitate processing. In the end, industrial food is likely to have been treated with some combination of

²⁴ *Ibid.*

²⁵ John E Losey, Linda S. Rayor and Maureen E. Carter, “Transgenic pollen harms monarch larvae”, *Nature*, vol. 399 n. 6733, May 20, 1999, p. 214.

hormones, dyes, bleaches, waxes, antioxidants, preservatives, chemical flavors, buffers, alkalisers, acidifiers, deodorants, moisteners, drying agents, expanders, modifiers, emulsifiers, stabilisers, thickeners, clarifiers, disinfectants, defoliant, fungicides, neutralisers, anticaking and antifoaming agents, hydrolysers, hydrogenators, antibiotics and other treatments.²⁶ In addition to these intended additives, traces of pesticides, herbicides, and fungicides can also be found.

All these chemicals are of very recent origin, and human defences are unprepared to protect us from many of them. Pesticides in particular can cause cancer, birth defects, immune system breakdown, and neurological damage, and can interfere with normal childhood development.²⁷ Others are implicated in the early onset of puberty, and still others are linked to increases in aggression.²⁸ Even the chemical fertilisers used in industrial agriculture pose a health problem: nitrates in water, for example, have been linked to 'blue-baby syndrome' in infants,²⁹ birth defects, and cancer.³⁰

Farm workers exposed to agrochemicals on the job can suffer serious health problems. As many as 300,000 farm workers in the US alone suffer from pesticide-related illnesses;³¹ worldwide, from 20,000 to 40,000 farm workers die each year from pesticide exposure.³² But one doesn't need to be a farm worker to be exposed to these toxic compounds. The US Environmental Protection Agency recently found that 80 percent of the nation's adults and 90 percent of children have measurable concentrations of insecticide in their urine.³³

Although agribusinesses insist that all of these chemicals have been tested for safety, they are not tested in the multiple combinations to which people are routinely exposed, or over the long periods of time that would be

²⁶ For more information on food additives, see the list compiled by Center for Science in the Public Interest, at <http://www.cspinet.org/reports/chemcuisine.htm>, http://www.cspinet.org/foodsafety/additives_avoid.html

²⁷ R. D. Morgan, ed. *Pesticides, Chemicals and Health*. (The British Medical Association). London: Edwards Arnold, 1992.

²⁸ Environmental Research Foundation. "Pesticides and Aggression", Rachel's Environment and Health Weekly, n. 648, April 29, 1999.

²⁹ Blue-baby syndrome is also known as methaemoglobinaemia. The last known case in the UK was recorded in the early 1950s, though deaths have occurred in the USA and Hungary in the 1980s. The condition is strongly associated with bacterial contamination in water and a range of other factors, of which nitrates in water is just one [see Conway, G. R., and Pretty, J. *Unwelcome Harvest: Agriculture and Pollution*. London: Earthscan, 1991].

³⁰ Peter Goering, Helena Norberg-Hodge and John Page. *From the Ground Up: Rethinking Industrial Agriculture*. London: Zed Books, 1993, p. 15, (new edition 2000).

³¹ London Food Commission. *Food Adulteration and How to Beat It*. London: Unwin, 1998.

³² Reported in S. Postel. "Controlling Toxic Chemicals", *State of the World*, 1988. New York: W.W. Norton, 1988.

³³ "Worrisome Level of Pesticide Found in Environment", The Los Angeles Times, October 29, 1999.

necessary to fully understand their effects. In any case, the proven health hazards of a particular agricultural chemical are no guarantee that its use will be prohibited. The US government agencies that regulate agricultural chemicals, for example, allow over 30 carcinogenic pesticides to be used on American crops.³⁴

Proponents of the global food system would have us believe that even if there are now more chemicals in our food, industrial processes have left it all but free of bacteria. Not so. According to the British Public Health Laboratory Service, food poisoning incidents in the UK have risen in tandem with the growth of the industrial food system: during the 1950s, there were on average only about 5,000 food poisoning incidents each year; in 1997 there were almost 20 times that number.³⁵ In the US, salmonella-related illnesses have doubled in the last two decades, and similar increases are reported for illnesses from *E. coli*, *campylobacter*, and *lysteria* bacteria.³⁶

Although the mass-production of foods is usually to blame for food poisoning incidents, proponents of the global food system claim that 'more of the same' will make food safer. One American expert believes that the solution to 'food scares' is "to barcode every product, from a grain of cereal to a loaf of bread."³⁷ Meanwhile, food irradiation has already been approved in the US for meats and other products, even though scientific evidence shows that irradiation reduces food's nutritional value, and leaves behind by-products that are themselves health hazards.³⁸

The mass-production of animal-based foods has also led to human health problems. When animals are allowed to range freely on small-scale, diverse farms they are apt to provide healthy milk, eggs and meat, and to remain healthy themselves. Livestock production on an industrial scale, however, puts animals in tightly confined and often unsanitary conditions, and leaves them at a much higher risk of disease. Antibiotics and other pharmaceutical drugs are widely used, not only to prevent illness but also to promote growth. In fact, roughly half the antibiotics produced in the US are used in the raising of animals for human consumption.³⁹ These drugs can leave residues in meat and milk, and their overuse is already rendering some strains of bacteria untreatable.

³⁴ Environmental Protection Agency, Office of Pesticides Programs. See list of carcinogenic pesticides and their regulatory status at the EPA website: www.epa.gov/pesticides/carlist/

³⁵ Public Health Laboratory Service (UK), facts and figures: www.phls.co.uk/facts/

³⁶ Robert V. Tauxe. (Centers for Disease Control and Prevention). "Emerging Foodborne Diseases: An Evolving Public Health Challenge", *Emerging Infectious Diseases*, vol.3, n. 4, October-December, 1997.

³⁷ "Under the Food Scares, a Credibility Problem", *The New York Times*, July 4, 1999.

³⁸ David R. Murray. *Biology of Food Irradiation*. Taunton, UK: Research Studies Press, 1990.

³⁹ Environmental Research Foundation. "Hidden Costs of Animal Factories", *Rachel's Environment & Health Weekly*, n. 690, March 9, 2000.

So far, one of the most disturbing consequences of industrial livestock production has been the spread of Mad Cow Disease, a product of the 'innovative' practice of feeding the remains of dead cows to live ones. The disease, BSE, eventually killed 175,000 cows in Britain, though far more were undoubtedly infected. BSE has now crossed the species barrier from cows to humans in the form of the deadly Creutzfeld-Jakob disease (CJD). Although the British government initially denied any link between Mad Cow Disease and CJD, it was later forced to reverse course and ordered the destruction of some 2.5 million animals.⁴⁰

So far, more than 100 people have died of CJD in the UK, but it is still unknown how high the death toll will eventually go. The UK government's chief medical officer admits that "We're not going to know for several years whether the size of the epidemic will be a small one, in other words in the hundreds, or a very large one, in the hundreds of thousands."⁴¹ Mad Cow Disease has now appeared in many other countries, including most recently the United States.

Food and the Economy

In economic terms, one of the most conspicuous features of the global food system is the shrinking percentage of the price of food that farmers receive. In part, this is because a large number of corporate intermediaries – international traders, food processors, distributors, and supermarkets – are receiving an ever-bigger share. In the United States, farmers in 1910 kept 41 cents of every food dollar spent by consumers. By the 1990s, the farmer's share had dropped to only 9 cents, while the marketing share has grown to 67 cents out of every food dollar.⁴²

Although consumers are generally taught to blame farmers for increases in food prices, it is the corporate middlemen that capture the lion's share of price hikes. In the US, for example, the consumers' price for a market basket of food has increased about 3 percent in real terms since 1984, while the farm value of that food has *fallen* by more than 35 percent.⁴³

Farmers are being economically squeezed in other ways as well. 'Free trade' policies force farmers to compete with others around the world, often in places where labour costs are far less. What's more, the market for an

⁴⁰ *Environmental Research Foundation*. "Mad Cow Disease in Humans", Rachel's Environment & Health Weekly, n. 683, January 20, 2000.

⁴¹ *ibid.*

⁴² Stewart Smith, "Farming Activities and Family Farms: Getting the Concepts Right", presented to US Congress symposium "Agricultural Industrialization and Family Farms", October 21, 1992.

¹⁵ USDA, National Agricultural Statistics Service. "Agriculture Prices" (Washington, D.C.: USDA, NASS, 1999).

⁴³ Robert C. Taylor, Professor of Agriculture and Public Policy at Auburn University, in testimony before the US Senate Agriculture Committee hearings on concentration in agribusiness, January, 1999 – cited in Krebs, A. V. *The Agribusiness Examiner*, n. 57, November 23, 1999.

export-oriented farmer's production can suddenly evaporate due to currency fluctuations or recessions thousands of miles away. In the United States, nearly one billion bushels of grain – half the nation's harvest – found no market in 1999, largely because an economic crisis in Asia dampened demand for US products.⁴⁴

In the South, farmers face similar problems. Those still connected to a local food system can count on feeding themselves with their own production, while those who have been drawn into the industrial food system must sell their production on global markets and use the proceeds to buy food. A farmer in Asia or Africa can easily be destroyed by a recession in Europe or a bigger-than-expected harvest in South America – events over which they have no control. Meanwhile an increasing proportion of the newly-'modernised' farmer's proceeds must be used to pay for equipment and inputs. The smallest, least capitalised farmers cannot afford those inputs, and are pushed off the land altogether.

Farmers in both North and South who are dependant on local food systems are largely insulated from international market forces. At the same time, those farmers retain a far higher proportion of the money spent on food, particularly when the cut taken by middlemen and processors is eliminated by selling directly to consumers. Even when local food is sold to nearby shops and restaurants, the farmer receives more than if it was sold to corporate middlemen. Importantly, the small shopkeeper's share of the price remains circulating in the local economy, adding to the farm community's economic health.

Small locally owned shops, in turn, are far more likely than supermarkets to sell local products. In many cases, local restaurants actively seek out produce, cheeses, wines, and meats from nearby farms, not only because they are likely to be fresher and higher in quality, but because they add to the distinctiveness of the restaurant's menu.

Contrast this to corporate supermarkets and fast-food chains, which obtain food from huge monocultural farms and truck it to every corner of the country. Since these businesses offer the same standardized fare in all of their widely dispersed outlets, selling more than a token amount of local products would jeopardize the structures and continual shareholder profits on which the entire global food system is based.

Local food systems are also more job-sustaining. Small farms are not suited the use of massive 'labour-saving' machinery, and so they provide far more jobs per acre than large farms. In the UK, for example, farms under 100 acres provide five times more per-acre employment than those over 500

⁴⁴ Tim Weiner. "Aid to Farmers Puts Parties in 'Political Bidding Contest'", *The New York Times*, August 4, 1999, p. A14.

acres.⁴⁵ It is not surprising, then, that as the average size of the UK farm steadily increased over the last half century, 700,000 farm jobs have been lost.⁴⁶

Farm workers' wages remain in the local economy, adding to the economic vitality of the community; money paid for heavy equipment and the fuel to run it, on the other hand, is almost immediately siphoned off to equipment manufacturers and oil companies. Similarly, when farms are organic, they can depend on their own inputs and less on purchased chemical inputs. But as the industrial food system has gained ground, an increasing share of farm income has been drained away. Farmers' fortunes have spiralled steadily downward, taking local businesses and entire rural economies with them: when 235,000 US farms failed during the mid-1980's, roughly 60,000 other rural businesses also went under.⁴⁷

Hard times for local businesses have been compounded by the invasion of large-scale chain retailers. In the 1990s alone, some 1,000 independent food shops – grocers, bakers, butchers and fishmongers – closed in the UK each year.⁴⁸ In Italy, the story has been the same: the arrival of superstores known as *ipermercati* have resulted in the demise of 370,000 small, family-run businesses – including half of the country's corner groceries – since 1991.⁴⁹

These corporate mega-markets systematically sap the economic vitality of the communities where they set up shop. Almost nothing they sell is produced locally, and their profits are drawn off to corporations with little connection to the community. Money that in a local food system would remain circulating over and over again is often lost forever.

It is often argued that large-scale producers and marketers are able to displace small farms and local shops largely because of 'economies of scale' that enable them to bring goods to market at lower prices. In the long run, the argument goes, lower prices mean that consumers are ultimately better off despite the loss of local businesses.

This line of reasoning is fundamentally flawed. If large-scale corporate producers and marketers sell goods at lower prices than their smaller competitors, it is only because of hidden subsidies and ignored

⁴⁵ H. Raven and M. Brownbridge, "Why Small Farmers?", cited in S. P. Carruthers and F. A. Miller, eds., *Crisis on the Family Farm: Ethics or Economics?*, CAS Paper 28 (Reading, England: CAS, 1996).

⁴⁶ J. Pretty, *The Living Land: Agriculture, Food and Community Regeneration in Rural Europe* (London: Earthscan, 1998).

⁴⁷ "Farm count at lowest point since 1850: just 1.9 million", *The New York Times*, November 10, 1994.

⁴⁸ DoE/MAFF, *Rural England: A Nation Committed to a Living Countryside*, *The Rural White Paper* (London: HMSO, 1995);

⁴⁹ Vania Grandi, "Small Grocers Disappearing into History as Superstores Emerge in Italy", *Burlington Free Press (Vermont)*, January 2, 1998, p. 6B.

environmental costs, both of which are ultimately paid by the 'consumers' these trends supposedly benefit. One estimate of the hidden benefits received by US corporations alone from subsidies and externalised costs is \$2.4 trillion annually.⁵⁰

Corporate food traders, middlemen, and marketers, for example, do not pay anything near the full cost of transporting food. Instead, governments use billions of dollars in taxpayers' money every year to build and maintain the transport infrastructures the global trading system requires. Other infrastructure requirements of large-scale enterprises, like instantaneous global communications facilities and centralized energy infrastructures, are similarly subsidized.

What's more, foods that have been industrially produced and transported great distances often seem 'cheaper' because they exclude their environmental costs. Neither the pollution costs of transport nor the environmental and health costs of chemical agriculture appear in the supermarket price of an industrial apple shipped 3,000 miles. Just shipping food within the borders of the United States, for example, pumps an estimated 120 million tons of CO₂ into the atmosphere annually, adding significantly to the greenhouse effect.⁵¹ Accounting for the food shipped to and from the US would add substantially to that figure.

Supporters of the global food system also argue that industrial farming has vastly increased agricultural productivity. This is a myth. Numerous studies have shown that small-scale, diversified farm systems almost always have a higher total output per unit of land than large-scale monocultures. Today, even conventional economists acknowledge that there is an "inverse relationship between farm size and output".⁵²

Food and Community

If the goal is to provide the most benefits to the most people, maintaining or shifting towards local food would be an important first step. This shift would improve the economic welfare of farmers, farm workers, small producers and shopkeepers, helping entire local economies and communities to thrive. In the South where many communities are still

⁵⁰ IMF Statistics Department, *International Financial Statistics*, February 1999, vol. 53, n. 2. (Washington, D.C.: International Monetary Fund, 1999).

⁵¹ Based on total food transport within US of 566 ton-miles in 1997 [US Census Bureau. *Transportation-Commodity Flow Survey, 1997 Economic Census*. Washington, D.C.: US Census Bureau, December 1999, Table 7], and CO₂ emissions per tonne-km for various transport modes: road - .248 kg; rail -.049 kg; ship -.036 kg; air - 1.447 kg. [Jules Pretty, et. al. "The Real Cost of the British Food Basket", Centre for Environment and Society, Department of Biological Sciences, Department of Economics, University of Essex, Colchester, UK, forthcoming].

⁵² Peter Rosset, "The Multiple Functions and Benefits of Small Farm Agriculture in the Context of Global Trade Negotiations", Policy Brief No. 4 (Oakland, CA: Institute for Food and Development Policy, 1999).

relatively intact, protecting them against the impacts of globalisation should be an urgent priority.

In the North, local food systems provide links between people in a community who might otherwise have little or no connection. Farmers' markets, for example, invariably become social events, with the purchase of food often becoming secondary to the social interactions the market encourages. Almost every downtown area that hosts a farmers' market finds that the entire town is enlivened on market day.

CSAs and other forms of direct marketing similarly strengthen bonds in a community, making consumers more directly aware of the life of the farmer, and letting the farmer know his customers. When CSA members meet at the farm on 'work days' or festivals, the bonds among them can grow even stronger.

Compare this to the industrial food system, which promotes anonymity at every turn. Consumers, farmers, processors, and distributors of industrial foods rarely know one another – and may not even live within 1,000 miles of each other.

In rural areas, the loss of community also has a physical dimension. As agricultural production is industrialised and rural people are uprooted, businesses in villages and small towns close, and many of their social and economic institutions are consolidated or transferred elsewhere, often in the name of 'efficiency'. Town centres, which should be lively focal points for culture and commerce, instead feel devoid of life.

The understandable sense of loss among those who remain in these communities is exacerbated by a barrage of media and advertising images emphasizing the glories of 'modern' life – implying that rural ways have no place in a future that will be, above all else, utterly high-tech. Rarely, if at all, do portrayals of the future respectfully depict rural people or land-based ways of living.

In the South as well, media images can make village life – already undermined by global economic forces – seem an anachronistic dead-end, and make location-specific social institutions and cultural practices appear pointless and hopelessly out-of-date.

Rural self-esteem sometimes absorbs even harder blows. In many parts of the North, farms have been disappearing at record rates for well over a generation. For people whose land is taken from them – in many cases land their families have lived on and worked for many generations – the sense of shame and anger can be immense. Many farmers direct those emotions inward, with suicide the result. In parts of the US, in fact, suicide is now the leading cause of death among farmers, occurring at a rate three times higher than in the general population.⁵³

⁵³ Joel Dyer, *Harvest of Rage* (Boulder, CO: Westview Press, 1998), p. 33.

Increasingly, however, the anger is being directed outward. While many dispossessed rural people are coming to understand the broad systemic forces that are ruining local economies and entire cultures the world over, many others have been convinced that their problems can be traced to racial minorities or Catholics, to immigrants, to a vast Jewish banking conspiracy, or to a world government run by the UN and enforced by swarms of black helicopters. The mix of hopelessness and misdirected anger in America's economically-ruined rural heartland is leading to increasing incidents of violence, played out in places like Ruby Ridge, Waco, and Oklahoma City. These events and others like them are among the many indirect costs of the global economy.

Rural areas are not the only places that pay a heavy price for the industrialisation of food: cities suffer as well, as they are the usual repositories for those whose way of life has been destroyed. Agricultural modernisation in China, for example, is expected to uproot 440 million people from rural areas, all of who will be migrating to urban areas in the next few decades.⁵⁴ In most cases, Third World cities already have more people than they can accommodate, with social and environmental problems that are largely unmanageable.

In 2000, 52 percent of the population in the so-called 'developing' world still lived in rural, land-based communities.⁵⁵ To modernise agriculture in those countries means reducing the agricultural workforce – now roughly 1.27 billion people – to levels closer to the 1 percent found in the US. Even reducing the proportion involved in agriculture down to 10 percent means throwing nearly 800 million people out of work. Those millions will have nowhere to go but urban centers, where they almost invariably find themselves on the bottom rungs of the economic ladder. Cut off from their communities and cultural moorings, people from many differing ethnic backgrounds face ruthless competition for jobs and the basic necessities of life. With individual and cultural self-esteem already eroded by the pressure to live up to media stereotypes, the elements are in place for a dramatic increase in anger, hostility, and conflict.

In both North and South, these trends are worsened by a growing sense of powerlessness. Within small-scale economies, people have a relatively large amount of leverage over the decisions that affect their own lives. But as economic scale grows, the ability of individuals and communities to determine their own destiny shrinks. For most citizens in today's global economy – even in supposed 'democracies' – the levers of power can easily seem to be beyond the reach of all but corporate CEOs, industry lobbyists, and wealthy campaign contributors. Even worse,

⁵⁴ Ian Johnson, "Tens of millions of peasants are setting off on China's new long march to find hope and work in the city", *The Guardian* (London), November 3, 1994, p. 16

⁵⁵ FAOSTAT

decisions that can directly affect the livelihoods of millions of people are routinely made behind closed doors in huge corporations or in supranational institutions like the WTO. And yet proponents of globalisation often speak as though the spread of the global economy and the spread of democracy were somehow inextricably linked.

Shifting course will not immediately change the undemocratic nature of modern societies. But if the scale of our economies were reduced, the principles of participatory democracy could more easily gain ground. Shifting control over food away from unaccountable corporations and back to the local level would help immeasurably in this process.

Food Security

One of the biggest threats to food security today stems from the increasing control a handful of corporations have over the world's food supply. For example, four companies now control 87 percent of American beef, another four control 84 percent of American cereal, and just one company, the Cargill corporation, controls 80 percent of the world's grain distribution.⁵⁶ Five agribusinesses account for nearly two-thirds of the global pesticide market, almost one-quarter of the global seed market, and virtually 100 percent of the transgenic seed market.⁵⁷ As corporate mergers and acquisitions continue, control over food will become even more concentrated in the future.

Why is corporate control over food a problem? The fact is that even if most employees of agribusinesses – including the highest levels of the corporate pyramid – earnestly care about environmental sustainability or feeding the world's hungriest, the 'rules of the game' that govern global finance would prevent them from acting on those impulses. Those rules insist that corporate policies should aim at profit-maximization and growth, and little else. Competition is so fierce that if a corporation veers from maximising its profits at any cost, shareholder lawsuits are likely, as are the prospects for a takeover by a more hard-nosed and profit-oriented competitor.

Today, some 842 million people are undernourished worldwide – even though enough food is produced to adequately feed everyone on the

⁵⁶ *The three largest beef packing companies are Tyson, ConAgra, and Excel (a subsidiary of Cargill); the four largest cereal companies are Kellogg, General Mills, Philip Morris, and Quaker Oats; the companies that dominate the world's grain trade are Cargill and Archer Daniels Midland. "Updated View of the Meatpacking Industry", REAP News and Views, July 31 2001, www.reap.org; A. V. Krebs, *The Agribusiness Examiner*, n. 19, January 28, 1999; A. V. Krebs, "It is Plain, Cargill's Reign in the Grain Has Become Profane", *The Agribusiness Examiner*, n. 9, November 12, 1998.*

⁵⁷ *The five agribusinesses at the top of the pesticide and transgenic seed market are AstraZeneca, DuPont, Monsanto, Novartis and Aventis. Rural Advancement Foundation International, www.rafi.org; and Agrow, No. 335, August 27, 1999.*

planet.⁵⁸ In part, this poor distribution of food arises out of the global economy's perverse logic, in which it makes economic sense that luxury foods are grown on the best land in countries where people are starving, and then exported to countries where food is so abundant that obesity is a major problem.

In the South in particular, the switch from growing food for local consumption to producing for export has had severe repercussions. Millions have been displaced from the land, and now find themselves in urban slums where food comes not from the earth and their own toil, but from markets, which demand cold hard cash. Endemic hunger is common.

Even in industrialised countries, many people lack access to high-quality food. Some 14 million people in Britain are below the poverty line. In the US, a decade-long economic 'recovery' was unable to lift an estimated 35 million Americans above the poverty line.⁵⁹ For those people, food security often means public assistance programs that provide barely enough to meet basic needs. Even this source of food is 'secure' only so long as political winds do not shift, suddenly limiting public assistance or putting an end to it entirely.

The industrialisation of food poses other risks to food security. As globalisation proceeds, people everywhere are becoming dependent on the same narrow range of foods. At the same time, 'free trade' and global market forces are eliminating many traditional crops from the market entirely. In Mongolia, where a staple of the diet has always been mare's milk – and where there are still 25 million milk-producing animals – shops now carry mostly European dairy products on their shelves.

In the South, food diversity is also being undermined by the psychological pressures that lead the young to lust for such modern foods as packaged ramen noodles, bottled soft drinks, and white bread, flour and rice. These nutritionally inferior foods are often considered 'high class', and many people are eagerly trading in their wholesome, traditional staple foods for them.

Overall, 75 percent of agricultural diversity has been lost in the last century.⁶⁰ The implications of that trend for food security are ominous. Not only are there fewer kinds of foods being raised and eaten around the world, but diversity within the few remaining staples is being lost as well. The risk of devastation by pests and blight rises exponentially when much of the entire planet's arable land is planted in virtually identical strains. In

⁵⁸ Food and Agriculture Organisation. "FAO reports a setback in the war against hunger", November 25, 2003, www.fao.org/english/newsroom/news/2003/24779-en.html.

⁵⁹ Joseph Dalaker, *Poverty in the United States, 1998*, US Census Bureau, *Current Population Reports, Series P60-207* (Washington, D.C.: US Government Printing Office, 1999).

⁶⁰ Food and Agriculture Organisation, *State of the World's Plant Genetic Resources* (Rome: FAO, 1996).

1970, for example, 80 percent of the corn planted in the US shared a common genetic heritage. When a maize blight struck, it quickly destroyed more than 10 million acres of corn.⁶¹

To put it bluntly, the entire industrial farming model is simply unsustainable. It is heavily dependent on non-renewable fossil fuels; it so poorly nurtures the soil that the US is losing topsoil 17 times faster than natural processes can create it;⁶² its dependency on large-scale irrigation leaves 5 to 8 million acres of farmland so badly salinated each year that it must be abandoned.⁶³

What's more, global warming – a direct product of the globalising industrial system – is expected to raise sea levels enough to flood many productive, low-lying agricultural areas around the world, including parts of Bangladesh and fertile river deltas in China, Egypt, Indonesia, Netherlands, and the US.⁶⁴ Global climate change may even halt or reverse ocean currents that now keep the climate temperate in northern latitudes. Many regions, including Britain, Scandinavia and northern Germany, may be unable to support agriculture at all.⁶⁵

A shift towards reliance on local food would promote real diversity at every level, thereby strengthening food security across the board. Instead of being flooded out by cheap imports that make it uneconomical to grow locally distinct varieties, food that best fits local conditions would have a chance to thrive. Rather than monocultures highly susceptible to devastation, farms would be more diverse, complex, and stable. Rather than identical varieties of crops planted everywhere, a wide range of varieties would be cultivated, limiting the potential for pandemic crop losses. And rather than increasing the rate at which greenhouse gases are being pumped into the atmosphere, the food sector's contribution to those gases would begin to decrease.

⁶¹ Jack Doyle, *Altered Harvest* (New York: Viking, 1985); *Food and Agriculture Organization statistics: apps.fao.org*

⁶² A. R. Berger and W. J. Iams (1996), *Geoindicators: Assessing Rapid Environmental Changes in Earth Systems*, Rotterdam: A. A. Balkema. Excerpted by the *International Union of Geological Sciences in Geoindicators: Tools for Assessing Rapid Environmental Changes*. Accessed October 23, 2003 from <http://www.gcrio.org/geo/title.html>

⁶³ F. Ghassemi, A. J. Jakeman and H. A. Nix, *Salinisation of Land and Water Resources* (Wallingford Oxon, England: CAB International, 1995) p. 48.

⁶⁴ Peter Bunyard, "A Hungrier World", *The Ecologist*, vol. 29, n. 2, March/April, 1999.

⁶⁵ Peter Bunyard, "How Global Warming Could Cause Northern Europe to Freeze", *The Ecologist*, vol. 29, n. 2, March/April, 1999.

Shifting Policies

It is time for policymakers to recognise that when food is treated as a commodity subject to lawless speculative investment, the health of the biosphere suffers and our quality of life diminishes.

That broader view would make it clear that producing food in ways that deplete the soil, pollute air and water, diminish food security, and risk human health are neither 'efficient' nor desirable. It would also be obvious that when the marketing of food drives farmers from the land, destroys local economies, and concentrates control over food within corporations, our lives are not thereby improved.

Unfortunately, this perspective is rare among policymakers. Virtually every government pursues policies that heavily favour the industrial, globalised food system, while punishing smaller scale, more localised producers and marketers. Until that imbalance is righted, the many grassroots efforts to create healthier and more sustainable food systems will have little chance to flourish and spread.

How can a shift in course be implemented? The policy shifts required can be broadly grouped into three basic imperatives:

1) Curtail the vast array of hidden subsidies that overwhelmingly favour large-scale enterprises oriented toward far-away markets

The globalisation of food is being propelled in part by massive subsidies. In some cases, particularly in the South, governments directly subsidize pesticides and chemical fertilisers as a means of encouraging large-scale agriculture for export. More often, the subsidies are hidden. Government expenditures on long-distance transport infrastructures, large-scale energy installations, high-speed communications networks, and high-tech agricultural research all enable huge agribusinesses and food corporations to produce and sell their products worldwide at artificially low prices. These subsidies not only offer few benefits for smaller, more ecological and locally-oriented producers and marketers, they harm them by making it easier for larger competitors to invade their markets.

In the North in particular, agribusinesses are also given huge tax breaks, such as the investment allowances and tax credits that are awarded to the capital- and energy-intensive technologies large producers depend on. On the other hand, smaller, more labour-intensive farms and markets are disproportionately burdened by levies on labour, such as income taxes, social welfare taxes, value-added taxes, and payroll taxes. Reversing these biases would go a long way towards implementing the shift from global to more local foods.

2) Renegotiate trade treaties

Enough pressure must be exerted from below to send governments back to the bargaining table to renegotiate trade treaties, this time with the

interests of people and the environment at the forefront. Since challenging the hegemony of international finance would be daunting for even the most powerful nation, a turnabout would be most likely to occur if groups of nations joined together with this purpose in mind.

Among the new 'rules of the game' would be the careful use of trade tariffs to regulate imports of goods that could be produced locally. Rejecting the corporate-led trade mania does not mean that all trade in food would end; it does not mean that citrus fruits and bananas would be unavailable to people in higher latitudes; it does not mean that a community whose crops fail could not expect help in the form of food from elsewhere. It simply means regaining a healthy balance between trade and local production, putting to an end to the fiction that more trade is always better than less.

Such 'protectionism' would not be targeted against fellow citizens in other countries; rather, it would be a means to safeguard jobs and defend local resources against the excessive power of transnational corporations.

3) Change regulations that punish the small producer.

Many regulations would be unneeded were it not for the scale at which large producers now operate. The US Centres for Disease Control, for instance, points out that food-borne diseases are more likely today because of the trend toward fewer, bigger food production facilities and longer distance distribution.

But rather than reducing the scale of our food systems, the usual response to food safety problems is to call for 'techno-fixes' too expensive for small producers to implement. In the US, for example, the recent discovery of *E. coli* bacteria in some industrially-produced fruit juices is likely to result in regulations requiring *all* juices to be pasteurised. The high cost of industrial pasteurisers would put out of business hundreds of small producers – even when *E. coli* contamination is highly unlikely from their operations. Similarly, the EU demand that cheese producers install tile floors and stainless steel kitchens is putting an end to small farm-based cheese making in Europe. In both cases, the markets of these small, local producers will be taken over by larger, more highly capitalized producers that can more easily absorb the costs of these regulations.

Clearly, strict regulatory oversight is needed for the global food system, which depends on dangerous agricultural chemicals, antibiotics, growth hormones, and genetically-modified organisms, and requires perishable food to be transported from continent to continent. Unfortunately, corporate lobbyists and the 'revolving door' between industry and the government regulatory agencies assure that health and safety regulations do little to improve the safety of the global food industry. In the US, for example, over 100 million acres of farmland have been planted in genetically-altered seeds, all with the blessing of various regulatory bodies.

One solution to this dilemma is a two-tier system of regulations: stricter controls on large-scale producers and marketers and a simpler set of locally-determined regulations for small-scale localised enterprises, acknowledging that such enterprises involve far fewer processes likely to damage human health, and are inherently less stressful on the environment. Such a system would also recognise that communities should have the right to monitor foods that are produced locally, for local consumption.

Inevitably, efforts to shift direction will be decried for entailing too much social and economic disruption. What this ignores, however, is the tremendous disruption and dislocation that the *global* system entails. In the name of progress, family farms and rural communities the world over are being driven to extinction and millions of people are being driven from the land. It is absurd to speak as though a shift in direction – one that will lessen all this social and economic hardship – would entail too much disruption.

Another objection is that the current system has so much momentum that its course cannot be fundamentally changed. But the crises of food and farming occurring today offer an unprecedented opportunity for powerful alliances among those working for systemic change. Today, urban citizens, small farmers, and rural communities in the North, as well as Southern farmers, villagers, and the newly urbanized poor all have a common cause. If these groups join hands, immense leverage can be exerted against the government support that the globalising model requires.

Despite the claims that globalisation is ‘inevitable’ and ‘irreversible’, experience shows that even a relatively small amount of public pressure can greatly influence government policy. Public resistance in Europe to the genetic modification of foods, for example, has so far prevented biotech multinationals and the United States government from forcing these foods down the throats of consumers. Thanks to the public outcry, many European governments have severely restricted or even banned imports of biotech seeds and foods, even at the risk of a trade war with the US. And the numerous protests against the global economic institutions have showed that forcing governments to rewrite international treaties is not impossible, once enough people become fully aware of their social, economic, and environmental implications.

As the many grassroots efforts to localise food production and marketing show, more and more people are aware that fundamental change is needed. The pressures exerted by the global marketplace are standardizing food and farming in ways that go fundamentally against nature. For the sake of a shortsighted goal of economic ‘efficiency’, governments and corporations have blindly set about reworking the entire agricultural landscape in ways that are contrary to the dictates of the natural world. In the process, we are being condemned to an unceasing battle with nature. It should be clear that shifting direction towards localising our food system is not only possible, it is imperative.

Development from the Heart

The economic changes discussed above must be accompanied by shifts at the personal level as well. In part, these involve rediscovering the deep psychological benefits – the joy – of living in community.

Another fundamental shift involves reinstilling a sense of connection with the place where we live. In the West, the globalisation of culture and information has led to a way of life in which what is nearby is treated with contempt. We get news from China, the Middle East or Washington, D.C., but remain ignorant about what is going on in our own backyard; at the touch of a button on a TV remote control, we have access to all the wildlife of Africa, and our immediate surroundings consequently seem dull and uninteresting by comparison. A sense of place means helping ourselves and our children to see the living environment around us: reconnecting with the sources of our food and learning to appreciate the cycles of seasons and the characteristics of the flora and fauna.

In Bhutan, there is a great opportunity to begin rebuilding the local economy and the vital social structures it supports, before it is completely steamrolled by globalisation. We hope that by sharing a glimpse of the problems caused by globalisation in this paper, we've helped to increase understanding of the vital need for a shift in direction. Ultimately, this involves a spiritual awakening that comes from making a connection with others, and with nature. It requires us to see the world within us – to experience more consciously the great interdependent web of life, of which we ourselves are part.

As we have shown there is still much to be done in order to shift away from certain ecological, economic and social collapse. It gives us great hope that there are already many initiatives that are working to reweave the local, the small-scale, the intimate, the natural. They show that, one way or another, nature will prevail, that it is a deeper *heart*-power and not money that truly makes the world go round. The question for all of us is a simple one: how soon will sufficient numbers of us learn to listen to our hearts?