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CAPITALISM AND THE ENVIRONMENT

Intensifying examples of extreme weather in the United States, including drought, heavy precipitation, heat waves, and devastating tornadoes, have brought home to Americans the reality that the Earth is in serious danger. While climate change deniers are well represented in the U.S. political system, environmentalists understand that it is necessary to make significant changes in how our economic system functions if we are to head off planetary disaster. Fred Magdoff and John Bellamy Foster are editors of the socialist magazine Monthly Review, whose first issue in 1949 featured an article by physicist Albert Einstein titled "Why Socialism?" In this article they argue that environmental problems are not essentially caused by ignorance or greed. Rather, "ecological destruction is built into the inner nature and logic of our present system of production." They go on to detail the ways in which capitalism as such is in conflict with environmental sustainability, as well as social justice. In response to proponents of "green" capitalism, they criticize a number of technical proposals for limiting ecological damage without fundamentally changing the economic system, such as "cap and trade" schemes. Magdoff and Foster believe that a sustainable future requires that social and political movements opposing the "logic of capital" grow stronger and achieve new connections, within the United States and globally.

For those concerned with the fate of the earth, the time has come to face facts: not simply the dire reality of climate change but also the pressing need for social-system change. The failure to arrive at a world climate agreement in Copenhagen in December 2009 was not simply an abdication of world leadership, as is often suggested, but had deeper roots in the inability of the capitalist system to address the accelerating threat to life on the planet. Knowledge of the nature and

limits of capitalism, and the means of transcending it, has therefore become a matter of survival.

THE PLANETARY ECOLOGICAL CRISIS

There is abundant evidence that humans have caused environmental damage for millennia. Problems with deforestation, soil erosion, and salinization of irrigated soils go back to antiquity.

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What is different in our current era is that there are many more of us inhabiting more of the earth, we have technologies that can do much greater damage and do it more quickly, and we have an economic system that knows no bounds. The damage being done is so widespread that it not only degrades local and regional ecologies, but also affects the planetary environment.

There are many sound reasons that we, along with many other people, are concerned about the current rapid degradation of the earth's environment. Global warming, brought about by human-induced increases in greenhouse gases (CO₂, methane, N₂O, etc.), is in the process of destabilizing the world's climate—with horrendous effects for most species on the planet and humanity itself now increasingly probable. Each decade is warmer than the one before, with 2009 tying as the second warmest year (2005 was the warmest) in the 130 years of global instrumental temperature records. Climate change does not occur in a gradual, linear way, but is non-linear, with all sorts of amplifying feedbacks and tipping points. There are already clear indications of accelerating problems that lie ahead. These include:

- Melting of the Arctic Ocean ice during the summer, which reduces the reflection of sunlight as white ice is replaced by dark ocean, thereby enhancing global warming. Satellites show that end-of-summer Arctic sea ice was 40 percent less in 2007 than in the late 1970s when accurate measurements began.
- Eventual disintegration of the Greenland and Antarctic ice sheets, set in motion by global warming, resulting in a rise in ocean levels. Even a sea level rise of 1–2 meters would be disastrous for hundreds of millions of people in low-lying countries such as Bangladesh and Vietnam and various island states. A sea level rise at a rate of a few meters per century is not unusual in the paleoclimatic record, and therefore has to be considered possible, given existing global warming trends. At present, more than 400 million people live within five meters above sea level, and more than one billion within twenty-five meters.
- The rapid decrease of the world's mountain glaciers, many of which—if business-as-usual greenhouse gas emissions continue—could be largely gone (or gone altogether) during this century. Studies have shown that 90 percent of mountain glaciers worldwide are already visibly retreating as the planet warms. The Himalayan glaciers provide dry season water to countries with billions of people in Asia. Their shrinking will lead to floods and acute water scarcity. Already the melting of the Andean glaciers is contributing to floods in that region. But the most immediate, current, and long-term problem, associated with disappearing glaciers—visible today in Bolivia and Peru—is that of water shortages.
- Devastating droughts, expanding possibly to 70 percent of the land area within several decades under business as usual; already becoming evident in northern India, northeast Africa, and Australia.
- Higher levels of CO₂ in the atmosphere may increase the production of some types of crops, but they may then be harmed in future years by a destabilized climate that brings either dry or very wet conditions. Losses in rice yields have already been measured in parts of Southeast Asia, attributed to higher night temperatures that cause the plant to undergo enhanced nighttime respiration. This means losing more of what it produced by photosynthesis during the day.
- Extinction of species due to changes in climate zones that are too rapid for species to move or adapt to, leading to the collapse of whole ecosystems dependent on these species, and the death of still more species. (See below for more details on species extinctions.)
- Related to global warming, ocean acidification from increased carbon absorption is threatening the collapse of marine ecosystems. Recent indications suggest that ocean acidification may, in turn, reduce the carbon-absorption efficiency of the ocean. This means a potentially faster build-up of carbon dioxide in the atmosphere, accelerating global warming.

While global climate change and its consequences, along with its “evil twin” of ocean acidification (also brought on by carbon emissions), present by far the greatest threats to the earth’s species, including humans, there are also other severe environmental issues. These include contamination of the air and surface waters with industrial pollutants. Some of these pollutants (the metal mercury, for example) go up smoke stacks to later fall and contaminate soil and water, while others are leached into surface waters from waste storage facilities. Many ocean and fresh water fish are contaminated with mercury as well as numerous industrial organic chemicals. The oceans contain large “islands” of trash—“Light bulbs, bottle caps, toothbrushes, Popsicle sticks and tiny pieces of plastic, each the size of a grain of rice, inhabit the Pacific garbage patch, an area of widely dispersed trash that doubles in size every decade and is now believed to be roughly twice the size of Texas.”

In the United States, drinking water used by millions of people is polluted with pesticides such as atrazine as well as nitrates and other contaminants of industrial agriculture. Tropical forests, the areas of the greatest terrestrial biodiversity, are being destroyed at a rapid pace. Land is being converted into oil palm plantations in Southeast Asia—with the oil to be exported as a feedstock for making biodiesel fuel. In South America, rainforests are commonly first converted to extensive pastures and later into use for export crops such as soybeans. This deforestation is causing an estimated 25 percent of all human-induced release of CO₂. Soil degradation by erosion, overgrazing, and lack of organic material return threatens the productivity of large areas of the world’s agricultural lands.

We are all contaminated by a variety of chemicals. A recent survey of twenty physicians and nurses tested for sixty-two chemicals in blood and urine—mostly organic chemicals such as flame retardants and plasticizers—found that

each participant had at least 24 individual chemicals in their body, and two participants had a high of 39 chemicals detected . . .

All participants had bisphenol A [used to make rigid polycarbonate plastics used in water cooler bottles, baby bottles, linings of most metal food containers—and present in the foods inside these containers, kitchen appliances etc.], and some form of phthalates [found in many consumer products such as hair sprays, cosmetics, plastic products, and wood finishers], PBDEs [polybrominated diphenyl ethers used as flame retardants in computers, furniture, mattresses, and medical equipment] and PFCs [perfluorinated compounds used in non-stick pans, protective coatings for carpets, paper coatings, etc.].

Although physicians and nurses are routinely exposed to larger quantities of chemicals than the general public, we are all exposed to these and other chemicals that don’t belong in our bodies, and that most likely have negative effects on human health. Of the 84,000 chemicals in commercial use in the United States, we don’t even have an idea about the composition and potential harmfulness of 20 percent (close to 20,000)—their composition falls under the category of “trade secrets” and is legally withheld.

Species are disappearing at an accelerated rate as their habitats are destroyed, due not only to global warming but also to direct human impact on species habitats. A recent survey estimated that over 17,000 animals and plants are at risk of extinction. “More than one in five of all known mammals, over a quarter of reptiles and 70 percent of plants are under threat, according to the survey, which featured over 2,800 new species compared with 2008. ‘These results are just the tip of the iceberg,’ said Craig Hilton-Taylor, who manages the list. He said many more species that have yet to be assessed could also be under serious threat.” As species disappear, ecosystems that depend on the multitude of species to function begin to degrade. One of the many consequences of degraded ecosystems with fewer species appears to be greater transmission of infectious diseases.

It is beyond debate that the ecology of the earth—and the very life support systems on which humans as well as other species depend—is under sustained and severe attack by human activities. It is also clear that the effects of continuing down the same path will be devastating. As James Hansen, director of NASA's Goddard Institute for Space Studies, and the world's most famous climatologist, has stated: "Planet Earth, creation, the world in which civilization developed, the world with climate patterns that we know and stable shorelines, is in imminent peril.... The startling conclusion is that continued exploitation of all fossil fuels on Earth threatens not only the survival of humanity itself—and the timetable is shorter than we thought." Moreover, the problem does not begin and end with fossil fuels but extends to the entire human-economic interaction with the environment.

One of the latest, most important, developments in ecological science is the concept of "planetary boundaries," in which nine critical boundaries/thresholds of the earth system have been designated in relation to: (1) climate change; (2) ocean acidification; (3) stratospheric ozone depletion; (4) the biogeochemical flow boundary (the nitrogen cycle and the phosphorus cycles); (5) global freshwater use; (6) change in land use; (7) biodiversity loss; (8) atmospheric aerosol loading; and (9) chemical pollution. Each of these is considered essential to maintaining the relatively benign climate and environmental conditions that have existed during the last twelve thousand years (the Holocene epoch). The sustainable boundaries in three of these systems—climate change, biodiversity, and human interference with the nitrogen cycle—may have already been crossed.

COMMON GROUND: TRANSCENDING BUSINESS AS USUAL

We strongly agree with many environmentalists who have concluded that continuing "business as usual" is the path to global disaster. Many people have determined that, in order to limit

the ecological footprint of human beings on the earth, we need to have an economy—particularly in the rich countries—that doesn't grow, so as to be able to stop and possibly reverse the increase in pollutants released, as well as to conserve non-renewable resources and more rationally use renewable resources. Some environmentalists are concerned that, if world output keeps expanding and everyone in developing countries seeks to attain the standard of living of the wealthy capitalist states, not only will pollution continue to increase beyond what the earth system can absorb, but we will also run out of the limited non-renewable resources on the globe. *The Limits to Growth* by Donella Meadows, Jorgen Randers, Dennis Meadows, and William Behrens, published in 1972 and updated in 2004 as *Limits to Growth: The 30-Year Update*, is an example of concern with this issue. It is clear that there are biospheric limits, and that the planet cannot support the close to 7 billion people already alive (nor, of course, the 9 billion projected for mid-century) at what is known as a Western, "middle class" standard of living. The Worldwatch Institute has recently estimated that a world which used biocapacity per capita at the level of the contemporary United States could only support 1.4 billion people. The primary problem is an ancient one and lies not with those who do not have enough for a decent standard of living, but rather with those for whom enough does not exist. As Epicurus said: "Nothing is enough to someone for whom enough is little." A global social system organized on the basis of "enough is little" is bound eventually to destroy all around it and itself as well.

Many people are aware of the need for social justice when solving this problem, especially because so many of the poor are living under dangerously precarious conditions, have been especially hard hit by environmental disaster and degradation, and promise to be the main victims if current trends are allowed to continue. It is clear that approximately half of humanity—over three billion people, living in deep poverty and subsisting on less than \$2.50 a day—need to have access to the requirements for a basic human

existence such as decent housing, a secure food supply, clean water, and medical care. We wholeheartedly agree with all of these concerns.

Some environmentalists feel that it is possible to solve most of our problems by tinkering with our economic system, introducing greater energy efficiency and substituting “green” energy sources for fossil fuels—or coming up with technologies to ameliorate the problems (such as using carbon capture from power plants and injecting it deep into the earth). There is a movement toward “green” practices to use as marketing tools or to keep up with other companies claiming to use such practices. Nevertheless, within the environmental movement, there are some for whom it is clear that mere technical adjustments in the current productive system will not be enough to solve the dramatic and potentially catastrophic problems we face.

Curtis White begins his 2009 article in *Orion*, entitled “The Barbaric Heart: Capitalism and the Crisis of Nature,” with: “There is a fundamental question that environmentalists are not very good at asking, let alone answering: ‘Why is this, the destruction of the natural world, happening?’ ” It is impossible to find real and lasting solutions until we are able satisfactorily to answer this seemingly simple question.

It is our contention that most of the critical environmental problems we have are either caused, or made much worse, by the workings of our economic system. Even such issues as population growth and technology are best viewed in terms of their relation to the socioeconomic organization of society. Environmental problems are not a result of human ignorance or innate greed. They do not arise because managers of individual large corporations or developers are morally deficient. Instead, we must look to the fundamental workings of the economic (and political/social) system for explanations. It is precisely the fact that ecological destruction is built into the inner nature and logic of our present system of production that makes it so difficult to solve.

In addition, we shall argue that “solutions” proposed for environmental devastation, which

would allow the current system of production and distribution to proceed unabated, are not real solutions. In fact, such “solutions” will make things worse because they give the false impression that the problems are on their way to being overcome when the reality is quite different. The overwhelming environmental problems facing the world and its people will not be effectively dealt with until we institute another way for humans to interact with nature—altering the way we make decisions on what and how much to produce. Our most necessary, most rational goals require that we take into account fulfilling basic human needs, and creating just and sustainable conditions on behalf of present and future generations (which also means being concerned about the preservation of other species).

CHARACTERISTICS OF CAPITALISM IN CONFLICT WITH THE ENVIRONMENT

The economic system that dominates nearly all corners of the world is capitalism, which, for most humans, is as “invisible” as the air we breathe. We are, in fact, largely oblivious to this worldwide system, much as fish are oblivious to the water in which they swim. It is capitalism’s ethic, outlook, and frame of mind that we assimilate and acculturate to as we grow up. Unconsciously, we learn that greed, exploitation of laborers, and competition (among people, businesses, countries) are not only acceptable but are actually good for society because they help to make our economy function “efficiently.”

Let’s consider some of the key aspects of capitalism’s conflict with environmental sustainability.

Capitalism Is a System That Must Continually Expand

No-growth capitalism is an oxymoron: when growth ceases, the system is in a state of crisis with considerable suffering among the unemployed. Capitalism’s basic driving force and its whole

reason for existence is the amassing of profits and wealth through the accumulation (savings and investment) process. It recognizes no limits to its own self-expansion—not in the economy as a whole; not in the profits desired by the wealthy; and not in the increasing consumption that people are cajoled into desiring in order to generate greater profits for corporations. The environment exists, not as a place with inherent boundaries within which human beings must live together with earth's other species, but as a realm to be exploited in a process of growing economic expansion.

Expansion Leads to Investing Abroad in Search of Secure Sources of Raw Materials, Cheaper Labor, and New Markets

As companies expand, they saturate, or come close to saturating, the “home” market and look for new markets abroad to sell their goods. In addition, they and their governments (working on behalf of corporate interests) help to secure entry and control over key natural resources such as oil and a variety of minerals. We are in the midst of a “land-grab,” as private capital and government sovereign wealth funds strive to gain control of vast acreage throughout the world to produce food and biofuel feedstock crops for their “home” markets. It is estimated that some thirty million hectares of land (roughly equal to two-thirds of the arable land in Europe), much of them in Africa, have been recently acquired or are in the process of being acquired by rich countries and international corporations.

A System That, by Its Very Nature, Must Grow and Expand Will Eventually Come Up Against the Reality of Finite Natural Resources

The irreversible exhaustion of finite natural resources will leave future generations without the possibility of having use of these resources. Natural resources are used in the process of production—oil, gas, and coal (fuel), water (in

industry and agriculture), trees (for lumber and paper), a variety of mineral deposits (such as iron ore, copper, and bauxite), and so on. Some resources, such as forests and fisheries, are of a finite size, but can be renewed by natural processes if used in a planned system that is flexible enough to change as conditions warrant. Future use of other resources—oil and gas, minerals, aquifers in some desert or dryland areas (prehistorically deposited water)—are limited forever to the supply that currently exists. The water, air, and soil of the biosphere can continue to function well for the living creatures on the planet only if pollution doesn't exceed their limited capacity to assimilate and render the pollutants harmless.

A System Geared to Exponential Growth in the Search for Profits Will Inevitably Transgress Planetary Boundaries

The earth system can be seen as consisting of a number of critical biogeochemical processes that, for hundreds of millions of years, have served to reproduce life. In the last 12 thousand or so years the world climate has taken the relatively benign form associated with the geological epoch known as the Holocene, during which civilization arose. Now, however, the socioeconomic system of capitalism has grown to such a scale that it overshoots fundamental planetary boundaries—the carbon cycle, the nitrogen cycle, the soil, the forests, the oceans. More and more of the terrestrial (land-based) photosynthetic product, upwards of 40 percent, is now directly accounted for by human production. All ecosystems on earth are in visible decline. With the increasing scale of the world economy, the human-generated rifts in the earth's metabolism inevitably become more severe and more multifarious. Yet, the demand for more and greater economic growth and accumulation, even in the wealthier countries, is built into the capitalist system. As a result, the world economy is one massive bubble.

There is nothing in the nature of the current system, moreover, that will allow it to pull back

before it is too late. To do that, other forces from the bottom of society will be required.

Capitalism Is Not Just an Economic System—It Fashions a Political, Judicial, and Social System to Support the System of Wealth and Accumulation

Under capitalism people are at the service of the economy and are viewed as needing to consume more and more to keep the economy functioning. . . . The notion of responsibility to others and to community, which is the foundation of ethics, erodes under such a system. In the words of Gordon Gekko—the fictional corporate takeover artist in Oliver Stone’s film *Wall Street*—“Greed is Good.” Today, in the face of widespread public outrage, with financial capital walking off with big bonuses derived from government bailouts, capitalists have turned to preaching self-interest as the bedrock of society from the very pulpits. On November 4, 2009, Barclay’s Plc Chief Executive Officer John Varley declared from a wooden lectern in St. Martin-in-the-Fields at London’s Trafalgar Square that “Profit is not Satanic.” Weeks earlier, on October 20, 2009, Goldman Sachs International adviser Brian Griffiths declared before the congregation at St. Paul’s Cathedral in London that “the injunction of Jesus to love others as ourselves is a recognition of self-interest.”

Wealthy people come to believe that they deserve their wealth because of hard work (theirs or their forbearers) and possibly luck. The ways in which their wealth and prosperity arose out of the social labor of innumerable other people are downplayed. They see the poor—and the poor frequently agree—as having something wrong with them, such as laziness or not getting a sufficient education. The structural obstacles that prevent most people from significantly bettering their conditions are also downplayed. This view of each individual as a separate economic entity concerned primarily with one’s (and one’s family’s) own well-being, obscures our common humanity and needs. People are not inherently selfish but

are encouraged to become so in response to the pressures and characteristics of the system. After all, if each person doesn’t look out for “Number One” in a dog-eat-dog system, who will?

Capitalism is unique among social systems in its active, extreme cultivation of individual self-interest or “possessive-individualism.” Yet the reality is that non-capitalist human societies have thrived over a long period—for more than 99 percent of the time since the emergence of anatomically modern humans—while encouraging other traits such as sharing and responsibility to the group. There is no reason to doubt that this can happen again.

The incestuous connection that exists today between business interests, politics, and law is reasonably apparent to most observers. These include outright bribery, to the more subtle sorts of buying access, friendship, and influence through campaign contributions and lobbying efforts. In addition, a culture develops among political leaders based on the precept that what is good for capitalist business is good for the country. Hence, political leaders increasingly see themselves as political entrepreneurs, or the counterparts of economic entrepreneurs, and regularly convince themselves that what they do for corporations to obtain the funds that will help them get reelected is actually in the public interest. Within the legal system, the interests of capitalists and their businesses are given almost every benefit.

Given the power exercised by business interests over the economy, state, and media, it is extremely difficult to effect fundamental changes that they oppose. It therefore makes it next to impossible to have a rational and ecologically sound energy policy, health care system, agricultural and food system, industrial policy, trade policy, education, etc.

CHARACTERISTICS OF CAPITALISM IN CONFLICT WITH SOCIAL JUSTICE

The characteristics of capitalism discussed above—the necessity to grow; the pushing of

people to purchase more and more; expansion abroad; use of resources without concern for future generations; the crossing of planetary boundaries; and the predominant role often exercised by the economic system over the moral, legal, political, cultural forms of society—are probably the characteristics of capitalism that are most harmful for the environment. But there are other characteristics of the system that greatly impact the issue of social justice. It is important to look more closely at these social contradictions imbedded in the system.

As the System Naturally Functions, a Great Disparity Arises in Both Wealth and Income

There is a logical connection between capitalism's successes and its failures. The poverty and misery of a large mass of the world's people is not an accident, some inadvertent byproduct of the system, one that can be eliminated with a little tinkering here or there. The fabulous accumulation of wealth—as a direct consequence of the way capitalism works nationally and internationally—has simultaneously produced persistent hunger, malnutrition, health problems, lack of water, lack of sanitation, and general misery for a large portion of the people of the world. The wealthy few resort to the mythology that the grand disparities are actually necessary. For example, as Brian Griffiths, the advisor to Goldman Sachs International, quoted above, put it: “We have to tolerate the inequality as a way to achieving greater prosperity and opportunity for all.” What's good for the rich also—according to them—coincidentally happens to be what's good for society as a whole, even though many remain mired in a perpetual state of poverty.

Goods and Services Are Rationed According to Ability to Pay

The poor do not have access to good homes or adequate food supplies because they do not have “effective” demand—although they certainly

have biologically based demands. All goods are commodities. People without sufficient effective demand (money) have no right in the capitalist system to any particular type of commodity—whether it is a luxury such as a diamond bracelet or a huge McMansion, or whether it is a necessity of life such as a healthy physical environment, reliable food supplies, or quality medical care. Access to all commodities is determined, not by desire or need, but by having sufficient money or credit to purchase them. Thus, a system that, by its very workings produces inequality and holds back workers' wages, ensures that many (in some societies, most) will not have access to even the basic necessities or to what we might consider a decent human existence.

It should be noted that, during periods when workers' unions and political parties were strong, some of the advanced capitalist countries of Europe instituted a more generous safety net of programs, such as universal health care, than those in the United States. This occurred as a result of a struggle by people who demanded that the government provide what the market cannot—equal access to some of life's basic needs.

Capitalism Is a System Marked by Recurrent Economic Downturns

In the ordinary business cycle, factories and whole industries produce more and more during a boom—assuming it will never end and not wanting to miss out on the “good times”—resulting in overproduction and overcapacity, leading to a recession. In other words, the system is prone to crises, during which the poor and near poor suffer the most. Recessions occur with some regularity, while depressions are much less frequent. Right now, we are in a deep recession or mini-depression (with 10 percent official unemployment), and many think we've averted a full-scale depression by the skin of our teeth. All told, since the mid-1850s there have been thirty-two recessions or depressions in the United States (not including the current one)—with the average contraction since 1945 lasting around

ten months and the average expansion between contractions lasting about six years. Ironically, from the ecological point of view, major recessions—although causing great harm to many people—are actually a benefit, as lower production leads to less pollution of the atmosphere, water, and land.

PROPOSALS FOR THE ECOLOGICAL REFORMATION OF CAPITALISM

There are some people who fully understand the ecological and social problems that capitalism brings, but think that capitalism can and should be reformed. According to Benjamin Barber: “The struggle for the soul of capitalism is . . . a struggle between the nation’s economic body and its civic soul: a struggle to put capitalism in its proper place, where it serves our nature and needs rather than manipulating and fabricating whims and wants. Saving capitalism means bringing it into harmony with spirit—with prudence, pluralism and those ‘things of the public’ . . . that define our civic souls. A revolution of the spirit.” William Greider has written a book titled *The Soul of Capitalism: Opening Paths to a Moral Economy*. And there are books that tout the potential of “green capitalism” and the “natural capitalism” of Paul Hawken, Amory Lovins, and L. Hunter Lovins. Here, we are told that we can get rich, continue growing the economy, and increase consumption without end—and save the planet, all at the same time! How good can it get? There is a slight problem—a system that has only one goal, the maximization of profits, has no soul, can never have a soul, can never be green, and, by its very nature, it must manipulate and fabricate whims and wants.

There are a number of important “out of the box” ecological and environmental thinkers and doers. They are genuinely good and well-meaning people who are concerned with the health of the planet, and most are also concerned with issues of social justice. However, there is one box from which they cannot escape—the capitalist economic system. Even the increasing numbers

of individuals who criticize the system and its “market failures” frequently end up with “solutions” aimed at a tightly controlled “humane” and non-corporate capitalism, instead of actually getting outside the box of capitalism. They are unable even to think about, let alone promote, an economic system that has different goals and decision-making processes—one that places primary emphasis on human and environmental needs, as opposed to profits.

Corporations are outdoing each other to portray themselves as “green.” You can buy and wear your Gucci clothes with a clean conscience because the company is helping to protect rainforests by using less paper. *Newsweek* claims that corporate giants such as Dell, Hewlett-Packard, Johnson & Johnson, Intel, and IBM are the top five green companies of 2009 because of their use of “renewable” sources of energy, reporting greenhouse gas emissions (or lowering them), and implementing formal environmental policies and good reputations. You can travel wherever you want, guilt-free, by purchasing carbon “offsets” that supposedly cancel out the environmental effects of your trip.

Let’s take a look at some of the proposed devices for dealing with the ecological havoc without disturbing capitalism.

Better Technologies That Are More Energy Efficient and Use Fewer Material Inputs

Some proposals to enhance energy efficiency—such as those to help people tighten up their old homes so that less fuel is required to heat in the winter—are just plain common sense. The efficiency of machinery, including household appliances and automobiles, has been going up continually, and is a normal part of the system. Although much more can be accomplished in this area, increased efficiency usually leads to lower costs and increased use (and often increased size as well, as in automobiles), so that the energy used is actually increased. The misguided push to “green” agrofuels has been enormously

detrimental to the environment. Not only has it put food and auto fuel in direct competition, at the expense of the former, but it has also sometimes actually decreased overall energy efficiency.

Nuclear Power

Some scientists concerned with climate change, including James Lovelock and James Hansen, see nuclear power as an energy alternative, and as a partial technological answer to the use of fossil fuels; one that is much preferable to the growing use of coal. However, although the technology of nuclear energy has improved somewhat, with third-generation nuclear plants, and with the possibility (still not a reality) of fourth-generation nuclear energy, the dangers of nuclear power are still enormous—given radioactive waste lasting hundreds and thousands of years, the social management of complex systems, and the sheer level of risk involved. Moreover, nuclear plants take about ten years to build and are extremely costly and uneconomic. There are all sorts of reasons, therefore (not least of all, future generations), to be extremely wary of nuclear power as any kind of solution. To go in that direction would almost certainly be a Faustian bargain.

Large-Scale Engineering Solutions

A number of vast engineering schemes have been proposed either to take CO₂ out of the atmosphere or to increase the reflectance of sunlight back into space, away from earth. These include: *Carbon sequestration schemes* such as capturing CO₂ from power plants and injecting it deep into the earth, and fertilizing the oceans with iron so as to stimulate algal growth to absorb carbon; and *enhanced sunlight reflection* schemes such as deploying huge white islands in the oceans, creating large satellites to reflect incoming sunlight, and contaminating the stratosphere with particles that reflect light.

No one knows, of course, what detrimental side effects might occur from such schemes. For example, more carbon absorption by the oceans

could increase acidification, while dumping sulphur dioxide into the stratosphere to block sunlight could reduce photosynthesis.

Also proposed are a number of low-tech ways to sequester carbon such as increasing reforestation and using ecological soil management to increase soil organic matter (which is composed mainly of carbon). Most of these should be done for their own sake (organic material helps to improve soils in many ways). Some could help to reduce the carbon concentration in the atmosphere. Thus reforestation, by pulling carbon from the atmosphere, is sometimes thought of as constituting negative emissions. But low-tech solutions cannot solve the problem given an expanding system—especially considering that trees planted now can be cut down later, and carbon stored as soil organic matter may later be converted to CO₂ if practices are changed.

Cap and Trade (Market Trading) Schemes

The favorite economic device of the system is what are called “cap and trade” schemes for limiting carbon emissions. This involves placing a cap on the allowable level of greenhouse gas emissions and then distributing (either by fee or by auction) permits that allow industries to emit carbon dioxide and other greenhouse gases. Those corporations that have more permits than they need may sell them to other firms wanting additional permits to pollute. Such schemes invariably include “offsets” that act like medieval indulgences, allowing corporations to continue to pollute while buying good grace by helping to curtail pollution somewhere else—say, in the third world.

In theory, cap and trade is supposed to stimulate technological innovation to increase carbon efficiency. In practice, it has not led to carbon dioxide emission reductions in those areas where it has been introduced, such as in Europe. The main result of carbon trading has been enormous profits for some corporations and individuals, and the creation of a subprime carbon market. There

are no meaningful checks of the effectiveness of the “offsets,” nor prohibitions for changing conditions sometime later that will result in carbon dioxide release to the atmosphere.

WHAT CAN BE DONE NOW?

In the absence of systemic change, there certainly are things that have been done and more can be done in the future to lessen capitalism’s negative effects on the environment and people. There is no particular reason why the United States can’t have a better social welfare system, including universal health care, as is the case in many other advanced capitalist countries. Governments can pass laws and implement regulations to curb the worst environmental problems. The same goes for the environment or for building affordable houses. A carbon tax of the kind proposed by James Hansen, in which 100 percent of the dividends go back to the public, thereby encouraging conservation while placing the burden on those with the largest carbon footprints and the most wealth, could be instituted. New coal-fired plants (without sequestration) could be blocked and existing ones closed down. At the world level, contraction and convergence in carbon emissions could be promoted, moving to uniform world per capita emissions, with cutbacks far deeper in the rich countries with large per capita carbon footprints. The problem is that very powerful forces are strongly opposed to these measures. Hence, such reforms remain at best limited, allowed a marginal existence only insofar as they do not interfere with the basic accumulation drive of the system.

Indeed, the problem with all these approaches is that they allow the economy to continue on the same disastrous course it is currently following. We can go on consuming all we want (or as much as our income and wealth allow), using up resources, driving greater distances in our more fuel-efficient cars, consuming all sorts of new products made by “green” corporations, and so on. All we need to do is support the new “green” technologies (some of which, such as using

agricultural crops to make fuels, are actually not green!) and be “good” about separating out waste that can be composted or reused in some form, and we can go on living pretty much as before—in an economy of perpetual growth and profits.

The very seriousness of the climate change problem arising from human-generated carbon dioxide and other greenhouse gas emissions has led to notions that it is merely necessary to reduce carbon footprints (a difficult problem in itself). The reality, though, is that there are numerous, interrelated, and growing ecological problems arising from a system geared to the infinitely expanding accumulation of capital. What needs to be reduced is not just *carbon footprints*, but *ecological footprints*, which means that economic expansion on the world level and especially in the rich countries needs to be reduced, even cease. At the same time, many poor countries need to expand their economies. The new principles that we could promote, therefore, are ones of sustainable human development. This means enough for everyone and no more. Human development would certainly not be hindered, and could even be considerably enhanced for the benefit of all, by an emphasis on sustainable human, rather than unsustainable economic development.

ANOTHER ECONOMIC SYSTEM IS NOT JUST POSSIBLE—IT’S ESSENTIAL

The foregoing analysis, if correct, points to the fact that the ecological crisis cannot be solved within the logic of the present system. The various suggestions for doing so have no hope of success. The system of world capitalism is clearly unsustainable in: (1) its quest for never ending accumulation of capital leading to production that must continually expand to provide profits; (2) its agriculture and food system that pollutes the environment and still does not allow universal access to a sufficient quantity and quality of food; (3) its rampant destruction of the environment; (4) its continually recreating and enhancing of the stratification of wealth within and between countries; and (5) its

search for technological magic bullets as a way of avoiding the growing social and ecological problems arising from its own operations.

The transition to an ecological—which we believe must also be a socialist—economy will be a steep ascent and will not occur overnight. This is not a question of “storming the Winter Palace.” Rather, it is a dynamic, multifaceted struggle for a new cultural compact and a new productive system. The struggle is ultimately against the *system of capital*. It must begin, however, by opposing the

logic of capital, endeavoring in the here and now to create in the interstices of the system a new social metabolism rooted in egalitarianism, community, and a sustainable relation to the earth. The basis for the creation of sustainable human development must arise *from within* the system dominated by capital, *without being part of it*, just as the bourgeoisie itself arose in the “pores” of feudal society. Eventually, these initiatives can become powerful enough to constitute the basis of a revolutionary new movement and society.

DISCUSSION QUESTIONS

1. Magdoff and Foster argue that the “logic” of capitalism as an economic system is in conflict with the environment. Which characteristics of capitalism do they identify to support this claim? Are you convinced that a fundamentally different economic system is necessary if ecological catastrophe is to be avoided?
2. Magdoff and Foster discuss several proposals for the ecological reform of capitalism. What are their criticisms of these proposals? Do you agree that “green” capitalism is a contradiction in terms?