
BLUEPRINT for a Better Planet

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Abstract (Article Summary)

Brown presents how citizens around the world can quickly mobilize to move people beyond "business as usual" and implement what he calls "Plan B," a proposal for a massive mobilization to deflate the environmental "bubble" economy. He explains the shifts in government spending, tax policies, and subsidies that people can make in order to create an environmentally sustainable eco-economy that serves the basic needs of all citizens and respects the Earth's limited natural resources.

Full Text (4235 words)

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In our last issue, in his article, "Growing... Growing... Gone?," global environmental sustainability expert Lester R. Brown outlined the huge environmental challenges our civilization faces. Now he presents the good news, spelling out how citizens around the world can quickly mobilize to move us beyond "business as usual" and implement what he calls "Plan B." Brown explains the shifts in government spending, tax policies and subsidies that we can, and must, make in order to create an environmentally sustainable eco-economy that serves the basic needs of all citizens and respects the Earth's limited natural resources.

- MOTHER

Plan B is my proposal for a massive mobilization to deflate our environmental "bubble" economy - one in which economic output is artificially inflated by over-consumption of the Earth's natural resources - before it reaches the bursting point. Keeping the global economic bubble from bursting will require an unprecedented degree of international cooperation to stabilize population, climate, water tables and soils - and at wartime speed. In both scale and urgency, the effort required is comparable to U.S. mobilization during World War II.

Our hope now is rapid systemic change based on market signals that tell the ecological truth. This

means restructuring the tax system by lowering income taxes and raising taxes on environmentally destructive activities, such as burning fossil fuels, to incorporate the ecological costs. Unless we can create a market that reflects reality, we will continue making faulty decisions as consumers, corporate planners and government policymakers. Ill-informed economic decisions and the economic distortions they create will lead to economic decline.

Plan B is the only viable option simply because Plan A, which is continuing with business as usual, offers an unacceptable outcome - continued environmental degradation and a bursting of the economic bubble. The warning signals are coming more frequently: collapsing fisheries, melting glaciers and falling water tables. So far the wakeup calls have been local, but soon, they could become global. For instance, massive imports of grain by China and the rise in food prices that likely would follow could awaken us from our lethargy. But time is running out. Bubble economies, which by definition are artificially inflated, cannot continue indefinitely. Our demands on the Earth exceed its regenerative capacity by a wider margin with each passing day.

Stabilizing world population at about 7.5 billion is central to avoiding economic breakdown in countries with large projected population increases that already are over-consuming their natural capital assets. Some 36 countries in Europe and Japan have essentially stabilized their populations, but the challenge now is to create the economic and social conditions that will lead to population stability in all countries. The keys here are extending primary education to all children, providing vaccinations and basic health care, and offering reproductive health care and family planning services in all countries.



Stabilizing falling water tables is even more difficult than stabilizing population because the forces triggering the fall have their own momentum that must be reversed. Stopping the fall depends on quickly raising water productivity - the urgency of this effort is difficult to overstate. Failure to stop the fall in water tables by systematically reducing water use will lead to the depletion of aquifers, an abrupt cutback in water supplies and the risk of a precipitous drop in food production. Many countries are now using highly efficient drip-irrigation technology, which is ideally suited to areas where water is scarce and labor is abundant, to produce high-value crops.

With soil erosion, we have no choice but to reduce soil loss to at least match the rate of soil formation. Otherwise we face a continued decline in the inherent fertility of eroding soils and cropland abandonment.

South Korea and the United States stand out for their efforts in stabilizing soils. South Korea, with once-denuded mountainsides now covered with trees, has achieved a level of flood control, water

storage and hydrological stability that is a model for other countries. Only a narrow demilitarized zone separates the two Koreas, but the contrast between them is stark. In North Korea, little permanent vegetation remains, droughts and floods alternate, and hunger is chronic. The U.S. record in soil conservation also is impressive. Beginning in the late 1980s, government policies guided U.S. farmers to retire roughly 10 percent of the most erodible cropland and plant grasses on the bulk of it. In addition, the United States leads the world in adopting minimum-till, no-till and other soil-conserving practices. With this combination of programs and practices, the United States has reduced soil erosion by nearly 40 percent in less than two decades.

A NEW KIND OF PATRIOTISM

Adopting Plan B is unlikely unless the United States assumes a leadership position, much as it did in World War II. After an all-out mobilization, the U.S. engagement helped turn the tide, leading the Allied Forces to victory within three-and-a-half years. Achieving this goal was possible only by converting existing industries to the war effort and using materials that previously went toward manufacturing civilian goods. The year 1942 witnessed the greatest expansion of industrial output in the nation's history - all for military use. Early in the year, the U.S. government banned the production and sale of cars and trucks for private use, halted residential and highway construction, and banned driving for pleasure. It also introduced a rationing program involving products such as tires, gasoline, fuel oil and sugar. Cutting back on consumption of these goods liberated resources to support the war effort.

In retrospect, the speed of the conversion from a peacetime to a wartime economy was stunning. Harnessing U.S. industrial power tipped the scales decisively toward the Allied Forces, reversing the tide of war: Germany and Japan could not match the United States' effort.

This mobilization of resources within a matter of months demonstrates that a country, and indeed the world, can restructure its economy quickly if convinced of the need to do so. The issue is not whether most people will eventually be won over, but whether they will be convinced before the bubble economy collapses.

CREATING AN HONEST MARKET

The key to restructuring the economy is the creation of an honest market, one that tells the ecological truth. The market is an incredible institution, but it does have three weaknesses: It does not incorporate the indirect costs of goods and services, it does not value nature's services properly, and it does not respect the sustainable-yield thresholds of natural systems such as fisheries, forests, rangelands and aquifers.

Throughout most of recorded history, the indirect costs of economic activity - the sustainable yields of natural systems or the value of nature's services - were of little concern because the scale of human activity was so small relative to the size of the Earth. But with the sevenfold expansion in the world economy over the last half-century, failing to address these market shortcomings and the economic distortions they create will lead to economic decline.

As the global economy expanded and technology evolved, the indirect costs of some products have become far more than the market price. The price of gasoline, for instance, includes only production costs.

Calculating the true costs to society of our reliance on gasoline means including the medical costs of treating those who are ill from breathing polluted air; the costs of acid-rain damage to lakes, forests, crops and buildings; and, by far the largest, the costs of climate change. Higher temperatures can wither crops and reduce harvests. They can melt ice and raise sea levels, inundating coastal cities, low-lying agricultural lands and low-elevation island countries. The interesting question is: What is the cost of burning a gallon of gasoline to society?

No one has attempted to fully assess the worldwide costs of rising temperatures and allocate those costs by gallon of gasoline or ton of coal. Some studies on the external cost of automobile use in the United States, however, were done during the early- and mid-1990s, including direct subsidies such as parking subsidies and many local environmental costs. A summary of eight of these studies by John Holtzclaw of the Sien'a Club indicates that if the price were raised enough to make drivers pay some of the indirect costs of automobile use, a gallon of gas would cost anywhere from \$3.03 to \$8.64. No studies, unfortunately, incorporated all the costs of using gasoline - including the future inundation of coastal cities, island countries and rice-growing river flood plains.

Something is wrong. If we have learned anything over the last few years, it is that dishonest accounting systems can be costly. Faulty corporate accounting systems that overstate income or leave costs off the books have driven some of the world's largest corporations into bankruptcy, costing millions of people their lifetime savings, retirement incomes and jobs.

Unfortunately, we also have a faulty economic accounting system at the global level, but with potentially far more serious consequences. Economic prosperity is achieved in part by running up ecological deficits costs that do not show up on the books but that someone will pay eventually. Some of the record economic prosperity of recent decades has come from too-rapid consumption of the Earth's productive assets - its forests, rangelands, fisheries, soils and aquifers - and from destabilizing its climate.

Some of the looming costs associated with continued fossil-fuel burning are virtually incalculable; the outcome, unacceptable. What is the cost of inundating half of Bangladesh's rice land by a 1-meter rise in sea level? How much is this land worth in a country the size of New York state with a population half that of the United States? And what would be the cost of relocating the 40 million Bangladeshis who would be displaced by the 1-meter rise in sea level? Could they be moved to another part of the country? Or would they migrate to less densely populated countries, such as the United States, Canada, Australia and Brazil?

Another challenge in creating an honest market is getting it to value nature's services. For example, after several weeks of flooding in the Yangtze River basin in 1998 flooding that eventually inflicted \$30 billion worth of damage and destruction - the Chinese government announced it was banning all tree cutting in the basin. It justified the ban by saying that standing trees are worth three times as much as cut trees. This calculation recognized that the flood control service provided by forests was far more valuable than the timber.

Forests also recycle rainfall inland. About 20 years ago, two Brazilian scientists, Eneas Salati and Peter Vose, published an article in Science stating that when rainfall from clouds moving in from the Atlantic fell on the healthy Amazon rain forest, one-fourth of the water ran off and three-fourths evaporated into the atmosphere, to be carried further inland to provide more rainfall. But when land was cleared for grazing, the numbers were reversed with roughly three-fourths running off and one-fourth evaporating for recycling inland. Ecologist Philip Fearnside, who has made a career of studying the Amazon, observes that the agriculturally prominent south-central part of Brazil depends on water that is recycled inland via the Amazon rain forest. If ranchers convert the Amazon into pasture, he notes, there will be less rainfall to support agriculture.

Once we calculate all the costs of a product or service, we can incorporate them into market prices by restructuring taxes. If we create a market that tells the truth, we can avoid being blindsided by faulty accounting systems that lead to bankruptcy.

RESTRUCTURING TAXES

Economists have widely endorsed the need for tax shifting - lowering income taxes while raising taxes on environmentally destructive activities - in order to create an honest market. These taxes reflect the indirect costs of an economic activity to society. For example, a tax on coal would incorporate the increased health care costs associated with breathing polluted air, the costs of damage from acid rain

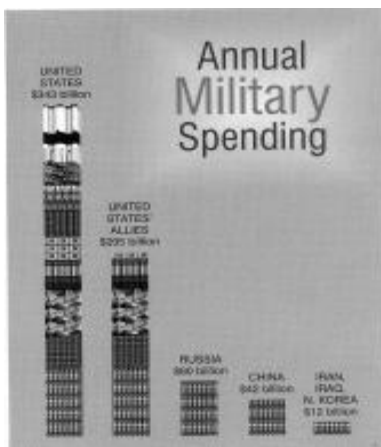
and the costs of climate disruption. Nine countries in western Europe have begun tax shifting, known as environmental tax reform. The amount of revenue shifted so far is small, just a few percent, but enough experience has been gained to know it works.

Among the activities taxed in Europe are carbon emissions, heavy metals emissions and the generation of garbage. Tax shifting does not change the level of taxes, only their composition. One of the better-known changes was a four-year plan adopted in 1999 in Germany to shift taxes from labor to energy. By 2001, this initiative had lowered fuel use by 5 percent. A tax on carbon emissions adopted in 1990 in Finland lowered emissions 7 percent by 1998 in that country.

Environmental tax reform is spreading outside Europe as well. The United States, for example, imposed a stiff tax on chlorofluorocarbons (CFCs) to phase them out in accordance with the Montreal Protocol of 1987. At the local level, the city of Victoria, British Columbia, adopted a trash tax of \$1.20 per bag of garbage, reducing its daily trash flow by 18 percent within one year.

One of the newer taxes gaining popularity is called a congestion tax. Two decades ago, Singapore was the first city to adopt such a tax. Although it was quite successful, only recently have other cities, such as Oslo, Norway, and Melbourne, Australia, done so. City governments tax vehicles entering the city, or at least the inner part of the city, where traffic congestion is most serious. In early 2003, London became the largest city to adopt a congestion tax; the average speed of an automobile was 9 mph - about the same as a horse-drawn carriage. An \$8 charge on all motorists driving into the city center between 7 a.m. and 6:30 p.m. immediately reduced the number of vehicles by 24 percent, permitting traffic to flow more freely while cutting pollution and noise.

For some products where the external costs are large and obvious, pressure is mounting to impose taxes. By far the most dramatic example is the agreement negotiated between the tobacco industry and state governments in the United States. After numerous state governments launched litigation to force tobacco companies to reimburse them for the Medicare costs associated with treating smoking-related illnesses, the industry decided to negotiate a package reimbursement, agreeing in November 1998 to reimburse the 50 state governments \$251 billion - nearly \$1,000 for every person in the United States. This landmark agreement was, in effect, a retroactive tax on cigarettes smoked in the past, one designed to incorporate some of the indirect costs.



Annual Military Spending

Environmental tax shifting also usually brings a double dividend. In reducing taxes on income - in effect, taxes on labor - labor becomes less costly, creating additional jobs while protecting the environment. This was the principal motivation in the German four-year shift from income to energy taxes. The shift from fossil fuels to more energy-efficient technologies and to renewable energy

sources reduces carbon emissions and represents a transition to more labor-intensive industries. Similarly, by lowering the air pollution from smokestacks and tailpipes, carbon taxes also reduce respiratory illnesses such as asthma and emphysema, and health care costs - a triple dividend.

When it comes to reflecting the value of nature, ecologists can calculate the values of services a forest provides in a given location. Once these are determined, they can be incorporated into the price of trees as a "stumpage tax" similar to the sort Bulgaria and Lithuania have adopted. Anyone wishing to cut a tree in these countries has to pay a tax equal to the value of the services that tree provides. Because forest services may be worth several times as much as the timber, this tax reduces tree cutting and encourages wood and paper recycling. These sorts of taxes create a more truthful market.

Tax shifting also helps countries gain the lead in producing new energy-efficient technologies. For example, the Danish government's tax incentives for wind-generated electricity have made Denmark, a country of only 5 million people, the world's leading manufacturer of wind turbines. Environmental tax shifting reduces taxes on wages and encourages investment in activities like wind power and recycling, thus simultaneously boosting employment and lessening environmental destruction.

SHIFTING SUBSIDIES

Each year the world's taxpayers underwrite \$700 billion in subsidies for environmentally destructive activities, such as burning fossil fuels, over-pumping aquifers, clear-cutting forests and over-fishing. A 1997 book-length Earth Council study entitled *Subsidizing Unsustainable Development* observes, "There is something unbelievable about the world spending hundreds of billions of dollars annually to subsidize its own destruction."

Iran provides a classic example of extreme subsidies: The country prices oil for internal use at one-tenth the world price, strongly encouraging the consumption of gasoline. The World Bank reports that if this \$3.6 billion annual subsidy were phased out, it would reduce Iran's carbon emissions by a staggering 49 percent. It also would strengthen the economy by freeing up public revenues for investment in the country's economic and social development. But Iran is not alone. The Bank reports that removing energy subsidies would reduce carbon emissions in Venezuela by 26 percent, in Russia by 17 percent, in India by 14 percent and in Indonesia by 11 percent.

Some countries already are eliminating or reducing these climate-disrupting subsidies. Belgium, France and Japan have phased out all subsidies for coal. Germany reduced its coal subsidies from \$5.4 billion in 1989 to \$2.8 billion in 2002, meanwhile lowering its coal use by 46 percent. Germans plan to phase these subsidies out entirely by 2010. China cut its coal subsidy from \$750 million in 1993 to \$240 million in 1995. More recently, it has imposed a tax on high-sulfur coals. Together, these two measures helped to reduce coal use in China by 5 percent between 1997 and 2001, when the economy was expanding by one-third.

Just as a need for tax shifting exists, we also clearly need to shift subsidies. A world facing the prospect of economically disruptive climate change, for example, can no longer justify subsidies to expand burning coal and oil. Shifting these subsidies to the development of climate-benign energy sources such as wind power, solar power and geothermal power is the key to stabilizing the Earth's climate. Shifting subsidies from road construction to rail construction can increase mobility in many areas while reducing carbon emissions. Eliminating environmentally destructive subsidies reduces the burden on taxpayers while discouraging the destructive activities themselves.

In a troubled world economy facing fiscal deficits at all levels of government, exploiting these tax and subsidy shifts with their double and triple dividends can help balance the books and save the environment. Tax and subsidy shifting promise gains in economic efficiency and reductions in environmental destruction, a win-win situation.

A CALL TO GREATNESS

History judges political leaders by whether they respond to the great issues of their time. For today's leaders, that issue is how to deflate the world's bubble economy before it bursts. This bubble threatens the future of everyone, rich and poor alike. It challenges us to restructure the global economy, to build an eco-economy.

A sense is growing among the more thoughtful political and opinion leaders worldwide that business as usual is no longer a viable option, that unless we respond to the social and environmental issues undermining our future, we may not be able to avoid economic decline and social disintegration. The prospect of failing states is growing as mega-threats such as the HIV epidemic, water shortages and land hunger threaten to overwhelm countries on the lower rungs of the global economic ladder. Failed states are a matter of concern not only because of the social costs to their people, but also because they serve as ideal bases for international terrorist organizations.

Thus, we now have some idea of what needs to be done and how to do it. The United Nations has set social goals for education, health and the reduction of hunger and poverty. In my book *Plan B: Rescuing a Planet Under Stress and a Civilization in Trouble* (available on MOTHER'S Bookshelf, Page 127), I have sketched out a restructuring of the energy economy to stabilize atmospheric carbon dioxide levels, a plan to stabilize population, a strategy for raising land productivity and restoring the Earth's vegetation, and a plan to raise water productivity worldwide. The goals are essential, and the technologies are available.

We have the wealth to achieve these goals. What we do not yet have is the leadership. And if the past is any guide to the future, that leadership can only come from the United States. By far the wealthiest society that has ever existed, the United States has the resources to lead this effort. Economist Jeffrey Sachs sums it up well: "The tragic irony of this moment is that the rich countries are so rich and the poor so poor that a few added tenths of 1 percent of GNP from the rich ones ramped up over the coming decades could do what was never before possible in human history - ensure that the basic needs of health and education are met for all impoverished children in this world." How many more tragedies will we suffer in this country before we wake up to our capacity to help make the world a safer and more prosperous place not through military might, but through the gift of life itself?

Unfortunately, the United States continues to focus on building a stronger military, as though that were the key to addressing these threats. The \$343-billion U.S. defense budget for 2002 (which does not include the most recent appropriation of \$87 billion for Iraq) dwarfs those of other countries - allies and others alike (see chart on Page 96). U.S. allies, most of them NATO members, spend \$205 billion a year on the military; Russia spends \$60 billion; China, \$42 billion; and Iran, Iraq, and North Korea combined spend \$12 billion. The United States is spending more militarily than all its allies and possible adversaries combined. As retired admiral Eugene Carroll, Jr., observed, "For 45 years of the Cold War, we were in an arms race with the Soviet Union. Now it appears we are in an arms race with ourselves."

The World Bank conservatively estimates the additional external funding needed to achieve universal primary education in the 88 developing countries that require help at \$15 billion per year. Funding for an adult literacy program based largely on volunteers is estimated at \$4 billion. The World Health Organization estimates that providing for basic health care would cost \$21 billion. The additional funding needed to provide reproductive health and family planning services to all women in developing countries is \$10 billion a year.

Closing the condom gap and providing the additional condoms needed to control the spread of HIV in the developing world and Eastern Europe requires \$2.2 billion \$270 million for condoms and \$1.9 billion for AIDS prevention education and condom distribution. The cost per year of extending school lunch programs to the 44 poorest countries is \$6 billion per year. An additional \$4 billion per year would cover the cost of assistance to preschool children and pregnant women in these countries.

In total, this comes to \$62 billion, less than one-tenth of what the world currently spends on military programs! If the United States offered to cover one-third of this additional funding, the other industrial countries would almost certainly be willing to provide the remainder, and the worldwide effort to eradicate hunger, illiteracy, disease and poverty would begin.

It is easy to spend billions in response to terrorist threats, but the reality is that the resources needed to disrupt a modern economy are small, and a Department of Homeland security, however heavily funded, provides only minimal protection from terrorists. The challenge is not only to provide a high-tech military response to terrorism, but to build a global society that is environmentally sustainable, socially equitable and democratically based. Such an effort would more effectively undermine the spread of terrorism than a doubling of military expenditures.

The challenge is not just to alleviate poverty, but also to build an economy that is compatible with the Earth's natural systems - an eco-economy, an economy that can sustain progress. This means a fundamental restructuring of the energy economy and a substantial modification of the food economy. It also requires raising energy productivity and shifting from fossil fuels to renewables. Lastly, it entails raising water productivity over the next half-century, much as we increased land productivity over the last one.

We can build an economy that does not destroy its natural support systems, a global community where the basic needs of all the Earth's people are satisfied, and a world that will allow us to think of ourselves as civilized. This is entirely doable. To paraphrase Franklin Roosevelt at another hinge point in history: Let no one say it cannot be done.

The choice is ours - yours and mine. We can continue business as usual and preside over a global bubble economy that will expand until it bursts and leads to economic decline. Or, we can adopt Plan B and become the generation that stabilizes population and climate, and eradicates poverty. Historians will record the choice, but it is ours to make.

[Sidebar]

A world facing the prospect of economically disruptive climate change can no longer justify subsidies to expand burning coal and oil.

[Sidebar]

Unless we respond to the social and environmental issues undermining our future, we may not be able to avoid economic decline and social disintegration.
